

THE AMERICAN PSYCHOLOGIST

VOLUME 9

NUMBER 2

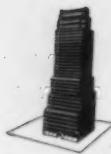


February, 1954

CALL FOR PAPERS

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THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 9

February, 1954

Number 2

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ANNOUNCEMENT OF MEETING AND CALL FOR PAPERS¹

SIXTY-SECOND ANNUAL CONVENTION OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Hotels Statler and New Yorker, New York City

Friday, September 3 through Wednesday, September 8, 1954

APA CONVENTION PROGRAM COMMITTEE

CHARLES N. COFER, Chairman; E. LOWELL KELLY, *ex officio*; GEORGE G. THOMPSON,
RICHARD P. YOUTZ, ALBERT S. THOMPSON

THE Convention Program Committee of the American Psychological Association announces the 1954 Convention, states the regulations and procedures which will govern it, and issues a Call for Papers. No other statement of regulations or Call for Papers will be presented, and all members, organizations, agencies, or other groups which wish to participate in the program should read, abide by, and plan with respect to this statement. A large proportion of the complaints, frustrations, and difficulties with our Convention arises from unfamiliarity with the rules, procedures, and deadlines presented here. Details concerning Convention registration, hotel reservations, facilities, and other housekeeping items will be announced in the April issue of the *American Psychologist*. The Program will be published by title in the July issue and the abstracts will appear in the August issue of the *American Psychologist*.

Eight types of Convention sessions and rules and procedures governing each are listed under the appropriate Roman numerals below. Certain general policies may be stated first.

A. The Divisional Program Committees are responsible for the selection of the major part of program content. The APA Program Committee schedules events of interest to all APA members. The Local Arrangements Committee will provide space, in so far as possible, for luncheons, dinners,

reunions, social hours, headquarters, and meetings of special groups, none of which contains substantive program content. These latter events will be listed in the Convention Program only if the necessary details are in the hands of the chairman of the Local Arrangements Committee by May 7.

The logic of this rule is as follows: APA program time and space belong to the members, who delegate their allocation to the APA Program Committee and to the Divisional Program Committees. Non-APA groups, such as Psi Chi, the Society for Projective Techniques, the Psychometric Society, government agencies, the International Council of Women Psychologists, test publishers, and the like, must submit substantive program content through the same channels and it must be evaluated in the same way as is program content submitted by APA members and groups. However, if space is available and as a courtesy, meetings not involving substantive content may be scheduled through the Local Arrangements Committee.

B. The Divisional Program Committees will function within time and space allotments, in order to keep the program to a manageable size.

C. A "blocked-time" system which will concentrate the programs of related Divisions in a portion of the Convention period will be used. Divisional Convention "periods" will be announced in the April issue of this journal.

D. No person may read more than one *volunteered* paper or participate in more than one symposium or discussion group at this Convention. There are two reasons for this rule. One is to insure the widest possible program participation of APA members. The other is to prevent unfor-

¹ The organization of this notice is considerably modified from that of previous years, and an attempt has been made to anticipate members' questions by clarifying and specifying the statement of rules and procedures. Members are invited to comment on this statement and to suggest ways of increasing its communicative value.

tunate conflicts in the time schedule. Several statements may clarify this regulation.

1. A person may read a paper and participate in either a symposium or a discussion group.

2. A person may read only one volunteered paper, but he may be listed as a second author for others: He may chair paper-reading sessions or other kinds of sessions and present films in addition to reading a paper.

3. A person may participate in only one symposium or discussion group. Since chairmen of these meetings ordinarily make a substantive contribution to them, chairmen are regarded as participants.

4. The responsibility for observing this rule rests with the individual member. *Its violation will disqualify the member from participating in the APA Convention program.*

E. Preconvention sessions. The APA Program Committee will not take responsibility for the scheduling of sessions to be held prior to September 3, but, as a courtesy, will list them in the Convention Program, provided that the necessary information reaches the Program Chairman by May 7. Persons arranging such sessions should write the Chairman, giving the times, rooms, topics, and participants to be listed. The Local Arrangements Committee will assist in the scheduling of preconvention sessions, but the responsibility for hotel reservations, meeting rooms, etc., rests with the persons concerned.

F. Slides. Although slides are not to be submitted to the Program Committees, notification of their intended use must be made on the abstract for an individual research report and on symposium proposals and after the titles of addresses. The Local Arrangements Committee can provide projectors for a meeting only if it knows in advance that they will be needed.

Standard lantern slides ($3\frac{1}{4}'' \times 4''$) are preferred. If $2'' \times 2''$ slides are to be used this must be so stated. Those using $2'' \times 2''$ slides should check well in advance of the session to be sure that a projector is available at that time; to be on the safe side a projector should be brought along if possible.

I. INDIVIDUAL REPORTS OF RESEARCH

A. Unless otherwise arranged by a Divisional Program Committee, four 12-minute papers will be scheduled for each one-hour session. *Only reports*

of completed research (data obtained, analysis completed) will be accepted. The abstract of a given paper may be submitted to *one Division only*. Abstracts must be submitted to the appropriate Divisional Program Chairman by April 9. The list of divisional program chairmen will be found on page 61 of this issue.

B. Who May Read Papers.

1. Any member of the APA (Fellow or Associate) may read a paper, provided that it has been duly accepted by the program committee of a Division and placed on that Division's program.

2. A nonmember of the APA may read a paper provided that he is sponsored by a member of the APA and provided that his qualifications and his paper are acceptable to the program committee of the Division concerned. (Foreign Affiliates and members of the Student Journal Group are not APA members and must be sponsored.) The APA member who agrees to sponsor a nonmember must submit the abstract of the nonmember's paper to the Divisional Program Committee concerned, together with the scientific qualifications and the name of the recognized national scientific society to which the nonmember belongs. In the case of graduate students, the letter should indicate the level of training and any other factors which might aid a divisional committee in determining fitness to present a paper. The paper of a nonmember accepted for the program will be indicated in the program and in the published abstract as follows: John Brown (Sponsor, John Doe).

3. Papers may not be presented by proxy. This rule may be waived in cases in which the author's attendance is prevented by circumstances beyond his control.

4. Each abstract must be accompanied by a signed $3'' \times 5''$ card, as follows:

Name(s): _____

Title of paper: _____

Institution: _____

Mailing Address: _____

If this paper is accepted and placed on the program, I promise to appear in person and deliver it unless prevented by conditions beyond my control.

(Signature)

5. Multiple authorship will be permitted; the first listed name in a multiple authorship should be that of the person who will read the paper.

6. Two volunteered papers which are identical or substantially equivalent may not be read at the Convention, either by a single person or by different members of a team of co-workers.

7. A paper previously read at any regional meeting may not be read at the Annual Convention; this does not preclude acceptance of a paper presenting additional results on a topic concerning which a preliminary report has been made at a regional meeting.

8. An abstract of a given paper may be submitted to one Division only.

C. Form of Abstracts.

1. Abstracts must be limited in length to 300 words. Longer abstracts will not be printed but will be listed by title only. Abstracts should not contain tables, drawings, graphs, or bibliographic entries. These will not be printed either. The reading time of the paper must be limited to 12 minutes.

2. Abstracts must be typed on one side of the paper only, double-spaced, and submitted in quadruplicate on $8\frac{1}{2}'' \times 11''$ white paper. The first copy should be on regular bond paper, not on onion skin or other thin paper. After they have been typed, the abstracts should be checked and proof-read carefully since they will be printed in the form in which they are submitted. Do not underline or type anything in all capitals.

3. Follow the outline below in preparing your abstract:

Title of paper:

Author(s): Sponsor (if any):

Institution(s):

Text of abstract here

Size of slides (if any):

Author, sponsor, and institution should appear on *the first copy only*. The other copies, without identifying data, will be used by Divisional Program Committees for judging the acceptability of the paper.

4. The text of the abstract should include a statement of the problem, subjects used, procedure, results, and conclusions.

5. Primarily discursive, theoretical papers, case studies, and the like are perfectly acceptable for the program. Abstracts of such nonexperimental papers must be accompanied by a manuscript (in quadruplicate) of the *complete paper*, however, because it is almost impossible to judge the quality of a theoretical discussion from a brief abstract alone.

D. Special Divisional Rules.

1. Division 1, General Psychology. This division will not present programs of individual papers. Its program will consist of symposia, invited addresses, and theoretical papers. Individuals

who wish to present theoretical papers should submit them to the Divisional Program Committee.

2. Division 8, Personality and Social Psychology. At the Divisional Program Committee's discretion, some of the Individual Reports will be accompanied by Invited Discussants. Where this is done, a one-hour session will consist of three papers and a discussion, and a two-hour session will consist of six or seven papers and discussion. The 12-minute time limit will be maintained for Individual Reports in these sessions.

3. Division 9, Society for the Psychological Study of Social Issues. This division's program for the 1954 APA Convention will consist largely of symposia and discussion groups. It has been the policy of Division 9 for several years that individual reports of research which might ordinarily be considered to fall in its domain, be handled instead by Division 8, the Division of Personality and Social Psychology.

4. Division 12, Clinical and Abnormal Psychology. The Program Committee of this Division will handle individual reports of research in two ways. (a) There will be a few sessions of the traditional presentations of 12-minute papers. (b) There will be sessions in which only the abstracts of papers will be read, but an open discussion between author and audience will follow the reading of each abstract. The Divisional Program Committee will determine to which kind of session an abstract will be assigned, and the Committee will also ask authors of selected papers to have copies or suitable summaries of their papers available for distribution at the Convention.

5. Division 14, Industrial and Business Psychology. This Division requires that *all* abstracts must be accompanied by the paper in its entirety.

E. Where to Send Abstracts.

1. An abstract, in quadruplicate, must be sent to one of the Divisional Program Chairmen. It may be submitted to only one Division. (See page 61 for names and addresses.) Select the Division which best represents the area of interest covered by the paper. Do not send abstracts to the Executive Secretary of the APA or to the APA Program Committee.

2. One need not be a member of the particular Division to which he sends his abstract as long as he is a Fellow or Associate of the APA, or in the case of nonmembers if rules of Section IB are followed.

3. The deadline for receipt of abstracts by the Divisional Program Chairmen is April 9.

F. Slides.

For regulations governing slides, see Policy F, page 56.

II. SYMPOSIA

A. Symposia are ordinarily presented as two-hour sessions, organized to provide for discussion of some topic by qualified participants and to permit discussion from the floor. Presentations by more than three or four participants, including the chairman, do not usually permit the unique value of the symposium to be realized.

Last year, 47 per cent of divisional program time was devoted to symposia. This means that, as the most time-consuming single type of program, they must be planned with care. The following recommendations are made to this end.

1. Divisional Program Committees must carefully evaluate their programs in relation to the objectives of their Divisions, and consider whether symposia are the most useful means for accomplishing these purposes.

2. Topics for symposia should reflect important and significant issues in the work of divisional members, and topics should normally not be repeated often, unless research, theory, or other developments are moving very rapidly.

3. Participants should be found who are unusually well qualified to speak on the symposium topic and who will agree to prepare their presentations well in advance of the meeting.

4. The participants should exchange their contributions prior to the Convention, in order to eliminate duplication and to assure the meeting of significant issues.

5. Interdivisional symposia are encouraged, in order to foster intradisciplinary communication.

B. Initiation. With the exception of symposia arranged by the APA Convention Program Committee, all symposia are arranged through Divisional Program Committees. Interdivisional symposia are considered to be jointly sponsored but should be forwarded to the APA Convention Program Committee as part of one Division's program with the joint sponsorship indicated after the title.

Symposia may be organized by Divisional Program Committees themselves or they may be organized by an individual member and submitted to the Divisional Program Committee. If a member

wishes only to suggest a symposium topic to the Divisional Program Committee, he must do so early enough to allow time for the symposium to be organized by that Committee.

1. Participants. Because symposia often involve topics extending beyond the competence of APA members, they will frequently include nonmembers as participants. Acceptance of a symposium proposal by the Divisional Program Committee constitutes the required sponsorship of nonmember participants.

C. Form of Symposium Proposals.

1. Symposium proposals made by members to Divisional Program Committees should indicate the topic for discussion, comment on the significance of the topic, and list the names of the chairman and other participants.

2. All symposium proposals must be accompanied by a signed pledge card from *each participant promising to appear and to participate in person unless prevented from doing so by conditions beyond his control*. This pledge is to be made on a 3" x 5" card just as is required of authors of individual research reports.

3. Regulations governing use of slides are stated in Policy F, page 56.

D. Special Divisional Rules.

1. Division 3, Experimental Psychology, and Division 8, Personality and Social Psychology, require that symposium proposals be accompanied by abstracts. These are to be limited to a 100-word general statement plus a 300-word abstract of the presentation of each participant. These are for the use of the Divisional Program Committee and will not be printed in the *American Psychologist*.

E. Submission of Symposium Proposals.

1. Completed symposium proposals, including the pledge cards, must be submitted to Divisional Program Chairmen by April 9. The topic and the participants' names should be typed in quadruplicate.

2. One need not be a member of the Division to which he submits a proposal or which sponsors a symposium in which he participates.

3. Members who wish only to suggest a symposium topic but who wish the Divisional Program Committee to organize the symposium should do so several weeks before the April 9 deadline.

III. ADDRESSES

The APA President will present the annual address. Addresses by Divisional Presidents may be arranged for by each Division. The APA President-elect will arrange for invited addresses by

eminent speakers in related fields. Individual members may suggest topics and speakers for invited addresses to the appropriate Divisional Program Committee. Rules governing the use of slides will be found in Policy F, page 56.

IV. EXHIBITS

Arrangements will be made for exhibits. Individual members are encouraged to exhibit apparatus, teaching aids, and other materials of scientific interest. Commercial exhibitors of books, apparatus, films, etc. may request arrangements for space. Both commercial and private exhibitors wishing to make arrangements should write to the Chairman of the Local Arrangements Committee, indicating type of exhibit and approximate space needs. Commercial exhibitors will be charged for exhibit space.

V. BUSINESS MEETINGS

Divisions, boards, committees, etc. of the APA desiring business meetings, should make their needs known to the Chairman of the APA Program Committee. These should include a statement of estimated attendance, time required, and whether arrangements for luncheon and dinner are also desired. In the case of Divisions, if the presidential address is to be given at the divisional business meeting, this fact should be included. The deadline for receipt of such communications is May 7.

Other groups, such as special interest groups, university groups, governmental agencies, etc. desiring meeting rooms, luncheon or dinner arrangements, etc. should contact the Chairman of the Local Arrangements Committee and not the Program Committee.

VI. SPECIAL PROGRAMS

Divisional Program Committees are urged to experiment with new kinds of programs in order to determine the best and most efficient means of serving the needs of their members. Interest and discussion groups, case presentations, demonstrations of techniques and procedures, headquarters rooms, etc. are often valuable alternatives to papers and symposia. Individual members are requested to suggest new types of programs but must do so early if extensive planning is required. All such suggestions must be submitted to the Divisional Program Committees by April 9.

A. Special Divisional Programs.

1. Division 8, Personality and Social Psychology, is inviting members to hold small discussion groups on specialized topics. These can be announced in the program and be assigned rooms. Groups of from 10 to 25 persons are anticipated. In case attendance is to be limited, or premeeting circulation of manuscripts is planned, these details should be indicated in the request to hold such a meeting. The name of the person responsible for each group will be printed in the program.

2. Division 9, The Society for the Psychological Study of Social Issues, invites suggestions from its members for small discussion groups on special topics. The suggested format includes: (1) Title. (2) A statement of no more than 200 words indicating (a) the relevance of the specialized topic to the field of psychology encompassed by Division 9, (b) the contribution such a discussion group would make to the program of Division 9 as well as an indication of some of the main themes and ideas that the group might discuss, and (c) the manner in which the group is to be led. (3) The suggested chairman of such a group should also be stated. It is expected that such a discussion group will consist of no more than 30 members.

3. Division 12, Clinical and Abnormal Psychology, plans two kinds of special programs as follows.

a. Topical Discussion Groups. Small discussion groups, perhaps meeting in multiple sections of 25 persons each, which will deal with special topics will be arranged. A member who would like to participate in such a group should send to the Divisional Program Chairman a 3" x 5" card, giving his name on one side and one or more topics of special interest to him on the other. Topics will be selected from cards received by March 15. Participation in this frankly experimental type of program will not constitute program participation in the sense of Policy D. *Further details about this program will be announced in the Division 12 Newsletter.*

b. Forum. At least one Forum will be arranged for those who would like to present a proposition of any kind and get a quick general reaction. A number of propositions will be considered in a single session. These propositions may be of any type: a new idea, a statement of perceived needs, forgotten goals, new concepts, apprehension regarding trends, new foci of research effort, convictions, notions,

hunches, etc. It is necessary that the proposition can be stated clearly in a few declarative sentences.

Members who would like to participate in a Forum should send in a 3" x 5" card to the Divisional Program Chairman, giving name on one side and a proposition on the other. Propositions will be screened for general interest and scheduled in order of receipt. There is no absolute deadline, but schedule-freezing in April will diminish chances of inclusion thereafter. Attendance is not obligatory, hence no pledge card is required.

The Forum is conceived of as a completely "audience" session at which any member (with advance notification) can try out briefly any notion which intrigues him, but for which he does not yet wish to be held fully accountable. It is a trial-and-error, stimulus-response session geared to move at a fast pace. Stimulus statements will be limited to a few sentences, audience response to five minutes. Speakers will be expected to remain afterward in room or corridor long enough for further contact with interested individuals.

VII. SPECIAL MEETINGS

Special meetings, luncheons, dinners, headquarters, social hours, etc. may be arranged by alumni groups, government agencies, test publishers, non-APA organizations, and the like in accordance with Policy A, page 55.

VIII. FILMS AND FILM STRIPS

A projection room and facilities for showing 16-mm. sound and silent films will be provided.

A. Those desiring to present new films, film strips, or other audiovisual aids (including sound recordings) should send them in finished form to the Chairman of the Audio-Visual Aids Committee by April 9.

B. Members desiring to show existing films should send the titles and the distributors' names to the Audio-Visual Aids Committee Chairman by April 9, indicating order of preference if more than one film is requested.

C. Commercial film producers and distributors may submit films for showing as described in paragraph A. They may also submit films as exhibits. See following paragraph.

D. The Audio-Visual Aids Committee will select the films and other materials to be presented as

part of the APA program. Additional films, or films rejected by the Committee, may be presented as exhibits, in which case the rules of Section IV, above, apply.

DIVISIONAL PROGRAM CHAIRMEN

In order to facilitate the work of the APA Convention Program Committee, it is required that all divisional program material (papers and symposia), requests for meetings, etc. be submitted to the APA Program Chairman by only *one* divisional representative, preferably the Divisional Program Chairman.

DEADLINES

April 9	Abstracts, manuscripts, proposals for symposia, discussion groups, and other types of program must be in the hands of Divisional Program Chairmen (see list, page 61).
April 9	Films, etc. must be in hands of Chairman of the Audio-Visual Aids Committee.
May 7	Requests for business meetings, luncheons, dinners, etc. of APA divisions, boards, committees, etc. must be in the hands of the Chairman, APA Convention Program Committee. Similar requests from special groups, university groups, government agencies, etc. must be in the hands of the Chairman, Local Arrangements Committee.
May 7	Completed divisional programs of individual papers, symposia, special meetings, etc. must be in the hands of the Chairman, APA Convention Program Committee. In addition to abstracts, the completed divisional programs include the general titles and the chairmen of the individual paper-reading sessions and symposium chairmen and other participants, plus the signed pledge cards.

DIVISIONAL PROGRAM CHAIRMEN

1954 Convention

Division 1. Division of General Psychology

Dr. Elizabeth Duffy
 Woman's College of the University of North
 Carolina
 Greensboro, North Carolina

Division 2. Division on the Teaching of Psychology

Dr. W. J. McKeachie
 Department of Psychology
 University of Michigan
 Ann Arbor, Michigan

Division 3. Division of Experimental Psychology

Dr. Robert A. Patton
 Department of Psychology
 University of Pittsburgh
 Pittsburgh 13, Pennsylvania

Division 5. Division on Evaluation and Measurement

Dr. Irving Lorge
 Box 130
 525 West 120th Street
 New York 27, New York

Division 7. Division on Childhood and Adolescence

Dr. Helen Koch
 1374 East 57th Street
 Chicago 37, Illinois

Division 8. Division of Personality and Social Psychology

Dr. Rex M. Collier
 VA Hospital
 Jefferson Barracks 23, Missouri

Division 9. The Society for the Psychological Study of Social Issues

Dr. Nathan L. Gage
 Bureau of Research and Service
 College of Education
 University of Illinois
 Champaign, Illinois

Division 10. Division on Esthetics

Dr. Melvin G. Rigg
 1218 Barland Street
 Eau Claire, Wisconsin

Division 12. Division of Clinical and Abnormal Psychology

Dr. Harold M. Hildreth
 5205 S. 8th Road
 Arlington 4, Virginia

Division 13. Division of Consulting Psychology

Dr. George A. Kelly
 Department of Psychology
 Ohio State University
 Columbus 10, Ohio

Division 14. Division of Industrial and Business Psychology

Dr. W. R. G. Bender
 3012 North Harrison Street
 Wilmington, Delaware

Division 15. Division of Educational Psychology

Dr. Guy T. Buswell
 Department of Education
 University of California
 Berkeley 4, California

Division 16. Division of School Psychologists

Dr. Judith A. Krugman
 Bureau of Educational Research
 New York Board of Education
 110 Livingston Street
 Brooklyn 1, New York

Division 17. Division of Counseling and Guidance

Dr. Paul Dressel
 Board of Examiners
 Michigan State College
 East Lansing, Michigan

Division 18. Division of Psychologists in Public Service

Dr. Kenneth B. Ashcraft
 2070 South Cook Street
 Denver 10, Colorado

Division 19. Division of Military Psychologists

Dr. Henry Imus
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THE DISCRIMINATION OF SEQUENCES IN STIMULUS EVENTS AND THE TRANSMISSION OF INFORMATION¹

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THREE can be little doubt that today we stand on the threshold of a new era in the analysis of behavior. New statistical procedures and new mathematical models are ushering in changes which should revolutionize the methods of investigation in all areas of psychology. In this paper I should like to outline in a general way some of the new techniques and models which are available and indicate how they have already proved useful in some of their initial applications to psychological problems.

The new techniques of quantification deal with behavior as a time series and are concerned precisely with those concepts of organization and patterning of behavior in individual cases which have been so difficult to approach using the nomothetic, cross-sectional statistical methods that have been available to us in the past. For some time clinical psychologists have been complaining quite properly that the available statistical methods are not adequate for the investigation of the concepts which are their primary concern (20). Some statisticians, naturally, cast a somewhat jaundiced eye at the clinicians, feeling that most of their complaints were motivated by frustration at the failure of conventional statistical analyses to prove that available clinical procedures were valid, but the sincerity and validity of the complaints could not be denied. At any rate, new techniques have developed, and they are being applied primarily by experimental psychologists, but one might predict that the greatest achievements of these new techniques will be in the study of the development of character and personality, normal and pathological, and in the study of the dynamics of behavior.

TIME AS A UNIVERSAL ORDERING VARIABLE

The basic reason why time series analysis must become of primary importance to all psychologists

¹ Presidential address presented at the meeting of the Midwestern Psychological Association, May 1, 1953.

is that all stimuli and all responses, whether we regard them as molecular, molar, patterned, or what not, are embedded in the time continuum. Many of us are interested in behavior which is not subject to highly refined methods of measurement, but we can usually classify, at least tentatively, and we can always count; and whether we use nominal, ordinal, or equal-interval scales, we can locate the behavior and the stimuli in the time continuum. This observation is not original. Psychologists have long devoted much attention and ingenuity to the longitudinal study of behavior. In almost all instances experimental studies have been more distinguished for the insight on the part of the investigator than for the finesse of the statistical analysis. Because of the nature of available statistical methods we can find frequent instances of the wrong statistical technique being used on the right problem, and we find that, in frustration, many psychologists have surrendered and have used the right techniques on what they regard basically as the wrong problems. Changes are not going to be effected overnight, but with the development and wider use of the new procedures research will be carried out with greater effectiveness on basic problems of the dynamics of behavior. Autocorrelators and other devices for the analysis of time series may never become as common as desk calculators, but I predict that in less than ten years the vast majority of the research centers of personality dynamics will be equipped with these basic devices.²

THE COMMUNICATION MODEL

Time series analysis is carried out in various contexts and in various frames of reference. This is no place for an exhaustive account of all of the elaborate details of these methods and contexts,

² An example of an excellent and relatively simple system for frequency analysis has been developed at the Naval Research Laboratory (10, 11). It is based on the same principle utilized by Knott, Gibbs, and Henry (16).

but it will be feasible to review some of the simpler models, to indicate where they have been useful, and to speculate as to where they will turn out to be useful in future psychological research.

A very important model for present-day psychologists is the communication paradigm used by Shannon of the Bell Telephone Laboratories (29).³ This is diagrammed in Fig. 1. From left to right we have the message source, the encoding process which prepares the message for the transmission line, the communication channel itself in which the message is likely to be mixed with noise, the process of decoding, and finally the destination of the message.

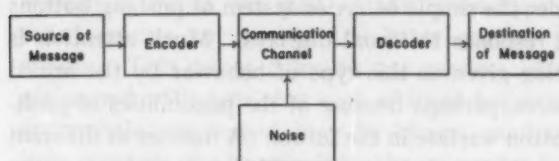


FIG. 1. Model for the transmission of information after Shannon (29).

In the transmission of messages through an actual communication channel, the coding is conventional in that both the message source and the message destination conform to a common code. It is not an earthshaking surprise to learn that this makes for efficient decoding. Furthermore, the channel is designed specifically to carry certain types of messages and to filter out or to reduce to a minimum the kinds of noise that are expected. All of this makes good sense and makes for efficient transmission of information.

In the absence of such admirable cooperation between the source and destination of the message we have situations such as those of military cryptanalysis. When signals are received from an enemy military source, the first question asked is, "Is it a message?" If the answer seems to be affirmative, the next question asked is, "What message was sent?" In this instance the message has been encoded in such a way as to be inconvenient for an enemy destination to interpret. In some instances noise may be introduced into the message, and in other instances the message may be disguised to resemble noise. In spite of these handicaps it is usually possible for the enemy destination to decipher the message, although perhaps at consid-

³ For a more elementary account of information theory see Miller (21) and Miller and Frick (22).

erable cost in time and effort. This remarkable accomplishment is possible because of two factors which help the enemy cryptanalyst. First, the statistical structure of language as a time series is fairly well known. Second, there is usually some knowledge of the subject matter of the message; that is to say, military traffic has to contain certain information, and the fact that such information must be transmitted aids in breaking down the coded messages.

We might think of the same communication model in the more difficult case of the reception of messages from Mars. If messages were received from Mars, they might be mistaken for noise. Time series analysis would, however, reveal a statistical structure different from that of noise, and the decoding of the message would then be attempted. Decoding a message from Mars would be difficult, if not impossible, because it would not be feasible to match the statistical structure of the signals with the known statistical structure of the language of the Martians. It is interesting to note that although we could not give an English translation for the message from Mars, we could give an extensive analysis of the statistical structure of the language simply by treating the signals as a time series. We might even go so far as to design or specify precisely the type of stochastic process that would produce time series which we could not distinguish from the messages from Mars. In short, we could almost produce messages in the Martian language. Incidentally, if they received our messages in "almost Martian," the Martians themselves might think we suffered from schizophrenia. At least they might complain that we could not keep talking on the same subject. This is shown by the following example of an English translation of one of *our* Martian sentences.

Then go ahead and do it if possible while I make an appointment. I want to skip very much around the tree and back home again to eat dinner after the movie early so that we could get lunch because we liked her method for sewing blouses and skirts (adapted from 23, p. 185).

In a scientific sense, however, we would have a good higher-order explanation of the messages, though we would never have translated their meaning.

THE STIMULUS-ORGANISM-RESPONSE MODEL

From Shannon's communication model it is such an easy step to the stimulus-organism-response

model shown in Fig. 2 that I have called the result "petty larceny." This diagram is not new. Most of you will recognize it as Woodworth's paradigm for the domain of psychology (32). Here the source of the message is the stimulus situation. The transmission is through the receptors and central nervous system of the organism, and the response of the organism constitutes the message destination.

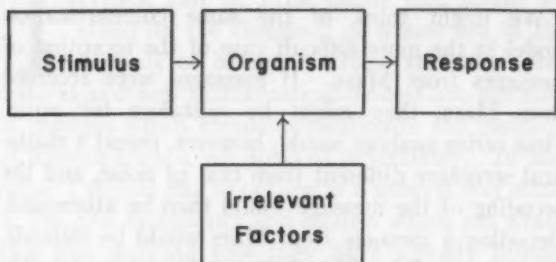


FIG. 2. The organism as a transmission system, mapping stimuli into responses.

In order to make this paradigm work for the psychologist it is first necessary to define carefully the capacity of a communication channel to transmit information. Initially, we remark that the information transmitted is not necessarily a function of the length of the message. Some messages are discursive and some are concise. It is also possible to code messages so that a rather extensive phrase or sentence can be sent as a single number or symbol. This is done in overseas cablegrams. To obtain an absolute unit for the capacity of a communication channel to transmit information it is necessary to consider the number of different messages which may be sent in a single unit of time. Taking a simple case, consider a single wire in which the circuit can be either closed or open during a single cycle. In other words, the single channel transmits two messages, a "yes" or a "no," during each operating cycle. If a second parallel channel or wire were added to the first, it is reasonable to think that the capacity of the single channel has been doubled. Now, however, one of four messages may be sent: "yes-yes"; "yes-no"; "no-yes"; and "no-no." Similarly, if a third channel were added, one of eight different messages could be sent on each cycle of the system. So we see that as the channel capacity increases arithmetically the number of possible messages increases geometrically. These considerations lead naturally

to the idea of using the logarithm of the number of possible messages as a measure of channel capacity. This is the procedure used by Shannon (29) with the logarithms taken conventionally to the base two. The unit of information or capacity is bits per second or bits per symbol, and this measure of channel capacity has proved to be of great practical utility.

Now let us consider two illustrations of the specific utility to psychologists of treating the organism as a communication channel. As our first example of the utility of the concept that the human organism has the capacity to transmit information from stimulus input to response output, let us consider the simple behavior system of pushing buttons in response to visual displays. Much attention is being given to this type of behavior by the armed forces, perhaps because of the possibilities of push-button warfare in the future. A number of different experiments have been carried out, and, as is the way with psychologists, no two of them are alike in apparatus or procedure (12, 15, 17, 25, 26). Sometimes two push buttons are used, sometimes three, sometimes four, sometimes eight, etc. The displays also vary considerably. In the simpler instances the visual display consists of a row of lights which coincides with the row of push buttons. Subjects practice responding to the light patterns to see how many light patterns can be matched by button presses in a given period of time. Since the apparatus and procedure differ from experiment to experiment, the first important question is how we can compare the final performances achieved in these different studies. One possibility is to translate the various units that are used in these investigations into Shannon's unit of bits per second. This is always possible when we can count the number of possible stimuli and responses. When this is done we find that in most of these experiments, where the subject presses keys or buttons to match lights that flash on a panel, the maximum transmission of information is of the order of three bits per second. This rate is rather similar from experiment to experiment. The fact that the different experiments give comparable results can be shown *only* when the absolute unit of bits per second of channel capacity is used. Here then is one example of the utility of the paradigm.

An even more remarkable instance of the utility of this paradigm, and an illustration of the fact that

the diagram in Fig. 2 is incomplete, arises when we consider other examples of push-button behavior. If the subject is able to pass three bits of information per second the situation might be illustrated by a display of eight lights in a row with eight matching keys underneath the lights, where the task for the subject is to press the key underneath the appropriate stimulus light. In this case the subject would average about one stimulus-response match per second. The situation appears, *a priori*, to be a fairly efficient way of transmitting information. But let us consider the transmission of information by a relatively able typist. Suppose that this typist is able to type 60 words per minute. Instead of words, we shall let the typist type 60 coded groups, or random five-letter groups, per minute. This comes down to five random letters per second. We note that each of these five letters or symbols per second may be chosen randomly from upwards of 32 symbols on the typewriter keyboard. Thus, each symbol is one out of 32 or more possible symbols, so that, taking the logarithm to base two of 32, we find that the transmission rate is at least five bits per symbol. Since there are five symbols typed each second, there are at least 25 bits of information transmitted per second through the typist. Twenty-five bits per second is more than eight times as great a channel capacity as the three bits per second in the push-button behavior in response to the simpler visual display. What is the source of the great discrepancy? The source apparently is in the encoding and decoding features of the typing situation which were omitted from Fig. 2. Clearly, stimuli can be arranged or coded in such a way as to facilitate the rapid transmission of information through the human operator. Here again is an instance of our paradigm working for us. It has revealed a problem of great theoretical and practical importance. The problem is this: what is the basis for the tremendous increase of information transmitted by means of optimal coding? If we did not have an absolute unit for the transmission capacity of a communication channel we might not be aware of the fact that a problem exists! Now, we know that the problem exists, and we have units which can be used to compare transmission capacities with different types of coding. This is just a glimpse at a problem which is being studied and will be studied in many laboratories concerned with military applications of psychology.

TIME SERIES ANALYSIS OF BEHAVIOR

The S-O-R paradigm constitutes *petty larceny* in the sense that the assumptions required are fairly reasonable. If we really feel ambitious and try to apply the communication paradigm to the analysis of behavior *per se*, we have what I refer to as a state of *grand larceny* in which we, as observers, try to decode behavior as a message in the presence of noise. From these messages we try to obtain an explanation for the source of the communication. This amounts to the study of the behavior of the organism as diagrammed in Fig. 3.

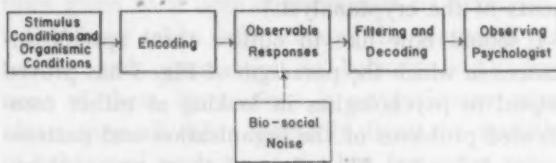


FIG. 3. Communication model in which the organism is conceived as the source which emits signals in the form of observable responses to be received or interpreted by the observing psychologist.

Here the organism serves as the source of the messages and the observing psychologist serves as the destination. It would appear that this situation is intermediate in difficulty between the problem faced by the cryptanalyst studying enemy military traffic and the hypothetical terrestrial who has received a message from Mars. In other words, we may not know as much about the behaving organism as we know about the structure of language, but we do know more about it than we might be expected to know about the linguistic habits of Martians. We have all kinds of hypotheses regarding the whys and wherefores of the behavior of the organism. We think that we know some of the messages which must be sent by our source; that is to say, we know some of the things which our organism must accomplish in order to remain alive and to function in our culture.

One of the fortunate things about the situation is that, unlike the military cryptanalyst or the recipient of the messages from Mars, we are not restricted to waiting passively for messages from the source. We can interrogate the source or stimulate it to make it transmit to us. Under different types of stimulation we would expect to obtain different types of messages so that we can compare the messages received with the stimuli present before the message was sent.

To investigate the stochastic structure of the organism we can consider the stimulus-response dependencies, the response-response dependencies, and the response-time dependencies. The first of these will be revealed by cross-correlation with the stimulus time series and the second two will be revealed by the autocorrelation or frequency analysis of the behavior itself.⁴ This paradigm for the study of behavior does not provide any magical explanations, but it does lead to the notion of using the powerful time series methods of analysis. (Incidentally, if there be doubters as to the power of these methods let them consider the accomplishments of the cryptanalyst.)

I should now like to outline three specific instances in which the paradigm of Fig. 3 has proved helpful to psychologists in looking at rather complicated problems of the organization and patterning of behavior. The first of these areas of application of this model has to do with the problem of diagnosis. The procedure of diagnosis has been studied mathematically in connection with the so-called weighing problems and in connection with the problem of optimum coding, which was the basis for Shannon's interest in the mathematical theory of information. Today this approach is being used by Bendig in the analysis of problem-solving behavior in a modified game of "Twenty Questions" (2), and by Robert Miller and the personnel of the Human Resources Research Center in the analysis of problem-solving behavior of electronic trouble shooters (24).

The principles of optimal diagnosis are very simple. The essential idea is that each diagnostic procedure should reduce the uncertainty of the diagnosis by a maximum amount in order to give the most efficient diagnostic routine. As an example consider the game of "Twenty Questions" with the modification that each of the 20 questions must be such as can be answered simply by "yes" or "no." In this case the questioner should frame each question so that the answer reduces the number of remaining alternatives by half. In terms of the mathematical theory of communication each diagnostic question would then reduce the uncertainty by one bit of information or the transmission of information would be one bit per question. If the questioner were efficient in framing his questions and in using all of the previous information

transmitted by earlier answers, he would be able to pick unerringly the correct answer from among 1,048,576 possibilities that his opponent might choose. Similarly, if there were 1,000,000 different things that could go wrong with a piece of electronic equipment or to an individual, no more than 20 successive binary diagnostic procedures would be needed to identify the fault if the procedures were designed for the optimum transmission of information.

Now, in trying to diagnose the stochastic structure of the organism or the source of messages in the paradigm shown in Fig. 3, we are very much concerned about the optimal transfer of information through the diagnostic procedures we institute to investigate the organism. We may not in practice achieve optimal results, but the model of optimal coding or maximal reduction of possible alternatives remains as a well-defined goal against which we can quantify and measure the efficiency of any of our present procedures. This means that we have an absolute criterion against which to judge the efficacy of any diagnostic procedure, whether it be the problem-solving queries of an individual playing "Twenty Questions" or the currently available clinical devices for diagnosing psychological disorders.

A second illustration of the use of time series analysis techniques based essentially upon the paradigm of Fig. 3 is in a recent study by Leary, Harlow, Settlage, and Greenwood (19). Performance of normal and brain-damaged monkeys on double-alternation problems was investigated. In general it was found that the normal animals were superior to the brain-damaged animals, and that animals with bilateral lesions in the posterior association areas were superior to those with bilateral lesions in the frontal association areas. An analysis of the sequences of specific responses was carried out, and it was found that for the normal and posterior animals the sequences of behavior became progressively more predictable as the sequence length increased. This was in marked contrast to the behavior of the frontal animals, for which the longer sequences of behavior were not more predictable than the shorter sequences. This means that the frontal animals showed less organization of their behavior in time. Furthermore, the degree of organization was quantified so that the effects of brain damage on the temporal organization of behavior could be specified in numerical terms.

⁴ Useful general references on autocorrelation and time series analysis include (1, 3, 14, 31).

A third example of the use of the paradigm of Fig. 3 is the study of Frick, who reports on the effects of an anxiety-producing stimulus upon the patterning of Skinner-box behavior of the rat (4). The food tray and the pressing bar were at different ends of the apparatus so that the trained animals developed a very regular pattern of moving about the apparatus from bar to food tray and back. Half of the animals were also given a series of shocks in the presence of an extraneous stimulus, a 25-w light. On test trials those animals and controls that had experienced the light without shock were tested for their operant behavior with and without the anxiety-producing light. The control and experimental animals were indistinguishable as far as rates of bar pressing and the number of approaches to the food tray were concerned. When the bar-pressing and tray-approaching behavior were autocorrelated, however, the disorganizing effect of the anxiety-producing stimulus immediately became apparent. The control autocorrelation functions were identical with and without the light, but the neat alternation of bar-pressing and tray-approaching behavior disappeared for the experimental subjects in the presence of the anxiety-producing stimulus. Their behavior became disorganized, and the autocorrelation function was a measure of the degree of disorganization of the behavior. Frick goes on to show how this and related techniques can be more widely applied to the study of the temporal structure of behavior as affected by other variables.

In the foregoing I have attempted to give some concrete instances to show how absolute units of channel capacity and information transmission can be helpful to the psychologist who wishes to compare behavior obtained in different stimulus-response situations. In turning attention to the stochastic structure of the organism as a source of messages, I have pointed out how communication theory provides a norm against which diagnostic behavior may be evaluated in problem solving, trouble shooting, or clinical work. Instances were also cited where time series analysis has already led to some preliminary quantification of the disorganization of behavior in brain damage and under anxiety. Time does not permit outlining further examples, such as Krendel's (18) application of the power-spectrum approach to motor performance; Miller and Selfridge's (23) use of stochastic models to produce scaled degrees of meaningfulness

in verbal learning materials; the analysis of Goodfellow (6) and Senders (27, 28) of response sequences; Hake and Garner's (8) work on the transmission of information in reading instrument scales; Hake and Hyman's (9) research on guessing sequences; work from the Wisconsin Laboratory on the stimulus-response relationships in guessing behavior (7, 13); or a number of other uses of time series in the analysis of behavior.

In closing, let me summarize by saying that I have tried to give you a glimpse of what I think is the beginning of a new era in the statistical analysis of behavioral data. All of the simple illustrations given have been characterized by approaches which have taken into account the temporal patterning and organization of behavior. Although none of these illustrations is revolutionary taken alone, they all differ markedly from the statistics of behavioral analyses of the last few years, which have been primarily cross-sectional. It must be remarked that there are technical problems in applying communication theory and time series analysis to behavior. We must worry about closed systems, stationary states, ergodic processes, and so on (29). It must also be admitted that these methods are not analytic in the sense that they alone cannot generate concepts to explain behavior. They are powerful tools with which psychologists may work rigorously and quantitatively on the very complicated problems of the temporal patterning of behavior. These tools cannot solve problems in and of themselves any more than the unaided microscope can solve biological problems. I feel confident, however, that these tools will permit the psychologist successfully to attack problems which have resisted his efforts when he was aided solely by cross-sectional statistical devices.

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THE RELATION BETWEEN PSYCHOMETRIC AND EXPERIMENTAL RESEARCH IN PSYCHOLOGY

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THE empirical researcher proceeds by holding constant some variables and varying those in which he is interested at the time. In psychology, this controlled variation is achieved by two main methods. At times the variables being studied are isolated and varied experimentally, but just as often the same end is approached by making use of the available psychometric techniques. If the psychometric researcher¹ and the experimentalist agree on anything, and there is some doubt about this, it is that the other kind of psychologist plays in another league (class B). In this paper we are concerned with making explicit the way in which psychometric and experimental modes of variation differ, and, at the same time, resemble each other.

EXPERIMENTAL AND PSYCHOMETRIC VARIABLES

In an investigation of the relation between, let us say, reaction time and alcoholic content of blood, variations in alcoholic content of blood are likely to be produced experimentally by feeding comparable groups of subjects different amounts of alcohol. The groups are treated in different ways, subjected to different conditions. On the other hand, in studying the relation between memory and intelligence, for example, variations in intelligence are obtained psychometrically by selecting individuals who vary with respect to scores on an intelligence test. In both cases we vary each of at least two variables in order to determine the relation between them, but the method of producing variation is different. In experimental investigations the investigator produces variation by changing the external environment, or internal state, or both, of his subjects. In psychometric research no attempt is made to produce any change in the individual subject. Rather, the subject is assumed to stay put with respect to the property (e.g., intelligence) in which

the investigator is interested, and variation in that property is obtained by selecting individuals who differ with respect to it. The experimentalist obtains variation by subjecting a given group of subjects to different experimental conditions, the psychometric researcher achieves it by moving from individual to individual.

Correspondingly, one can distinguish between experimental and psychometric variables. Experimental variables, such as frustration or alcoholic content of blood, are defined in terms of experimental operations; they are variables by virtue of the fact that experimental conditions can be changed. Psychometric variables, such as intelligence or frustration tolerance, derive their meaning from psychometric operations; they are variables because individuals differ with respect to them. Sometimes variables bearing the same name are defined in terms of both psychometric and experimental operations. For instance, anxiety may refer to scores on a personality inventory (or to psychiatric ratings), and it may also be defined in terms of different degrees of experimental stress (different intensities of electric shock, for example) applied to a subject. Of course, variables that have different defining operations do not become identical by being christened with the same name. Anxiety defined psychometrically and anxiety defined experimentally may be two quite distinct variables. Equivalence, or lack of equivalence, of the two operations would have to be empirically determined, and unless they can be shown to be equivalent, the investigator should specify whether the variable is being defined experimentally or psychometrically (whether he is talking about "psychometric anxiety" or "experimental anxiety").

This consideration of the nature of psychometric variables clears up some of the confusion concerning the nature of personality research. Most of the variables studied in personality research are psychometric variables, being defined in terms of individual differences. Allport's traits (1), Murray's needs (6), and Cattell's factors (3) are all psychometric

¹ By psychometric research we mean studies in which psychometric techniques are used to investigate relations between variables. This specifically excludes the use of such techniques in assessing individuals for clinical or other applied psychological work.

variables in this sense. The fact that the psychometric method of obtaining variation involves selecting individuals who represent different degrees of the property has led some to believe that personality research is concerned with the individual *per se* rather than with variables and their interrelations. This misconception has led to a confusion of personality research with clinical psychology, where the concern is with the individual case. Our analysis of the nature of psychometric variation shows that the use of the individual in personality research is only a means of obtaining variation, not an end in itself. Personality research, like all other scientific inquiry, is concerned with variables, and of the two methods of producing variation the psychometric method seems at present to be more suited to the type of problems with which personality research is concerned.

In fact, however, personality research does not restrict itself to the use of the psychometric variables or the psychometric method of variation. The work of Lewin (4), MacKinnon (5), and Alper (2), for example, has successfully made use of the experimental mode of variation in personality research. Perhaps the crucial difference between the "organism-centered" approach of Allport (1), Murray (6), and Cattell (3), and the "field-centered" approach of Lewin lies in the method of variation they use. Murray, Allport, and Cattell use mostly psychometric variables and psychometric modes of variation, while Lewin works primarily with experimental variables and the corresponding mode of variation. Rephrasing the differences between the two "schools" in this way may be useful, for it reveals that they may involve only different ways of doing the same thing—producing variation in order to study relations among variables—rather than basically opposed metaphysical theories concerning the locus of causation in behavior.

We turn now to the possibilities of using the psychometric and experimental methods in combination.

COMBINED USE OF THE TWO METHODS

Use of experimental variation in traditionally psychometric research. The general assumption underlying psychometric research is that certain properties (such as intelligence and extraversion) of the individual remain more or less constant, changing but little between successive measurements of them. Stevens points out that the rela-

tively invariant characteristics of the organism are important for the investigator simply because they do "stay put while his back is turned" (7, p. 21). But the sad fact is that very few psychologically meaningful properties ever really stay put even while the investigator is looking straight at them. The psychometrician is forever plagued by some intra-individual variation in successive measurements of the same person. It is logical to blame such fluctuation on shortcomings of the test used only if one has assumed first that the property measured is absolutely invariant. This is probably always a rash assumption, at least for the living animal.

To ignore these intra-individual variations in psychometric research by ascribing them to unknown or uncontrolled factors is obviously unwise; we should not assume that the unknown is unknowable or the uncontrolled uncontrollable. Rather than simply deplored a low test-retest correlation, we might systematically investigate the way in which, and the degree to which, certain "extraneous" conditions may have produced the low reliability. Such a systematic investigation can proceed experimentally, by isolating and manipulating variables that appear to be relevant to intra-individual variations in relatively stable properties of the organism. The knowledge of what experimental conditions do change a property may enable the psychometrician to control such conditions in future measurements of that property, and it also may lead to the discovery of new properties not affected by these conditions. Thus, the use of experimental variation in psychometric research may be of considerable help both in making psychometric measurement more exact, that is, reliable, and in suggesting ways of experimentally changing the organism's "invariant" properties. Instances of both these applications can probably be found in psychological literature. What we are recommending is an explicit recognition of their theoretical basis. Such recognition should lead to a more deliberate and extensive use of experimental variation in psychometric research.

Use of psychometric variation in traditionally experimental research. There is frequently a limit to the variation that can be produced in a given individual by changing experimental conditions. An experimenter may be able, for example, to increase the frustration tolerance of his subjects by devising a playful experimental situation, but such experimentally produced changes may be slight as

compared to the marked individual differences in frustration tolerance that can be obtained only through a psychometric device. Thus, in certain types of traditionally experimental problems it may be possible to obtain psychometrically a range of variation which cannot be produced by experimental treatment, no matter how severely experimental conditions are manipulated. Recently Spence and Taylor (8) used a psychometric device in what has traditionally been an experimental problem. In investigating the relation between anxiety and rate of eyelid conditioning they obtained variations in anxiety (a) psychometrically, by using subjects who varied with respect to their scores on an anxiety inventory, and, concomitantly, (b) experimentally, by varying the intensity of the air puff delivered to subjects during conditioning. This study by Spence and Taylor provides one instance of the general theoretical formulation we have given to the possibilities for the combined use of psychometric and experimental variation.

The use of psychometric variation in experimental research can pay off in another way. Frequently an experimental treatment fails to produce the expected effect because the psychometric variation introduced by uncontrolled individual differences obscures or confounds the otherwise significant effect of the experimental treatment. For instance, Alper (2) has pointed out that it is necessary to distinguish (and control) psychometrically between "easily self-esteem involved" and "not easily self-esteem involved" subjects before a significant difference in recall of completed versus incompletely tasks may be demonstrated. Such uncontrolled psychometric variation might be controlled psychometrically (inventory, clinical rating, etc.) by measuring ease of self-esteem involvement, and

then either selecting only subjects of similar scores for the experimental treatment or, alternatively, statistically partialling out the effects of differences in ease of self-esteem involvement from other correlations involved in the study.

We have shown how psychometric and experimental techniques, being basically similar in aim, can be used together in areas traditionally restricted to one or the other. In fact, we have indicated that to a certain extent this has been done already. What we need to do now is to recognize explicitly the relation between these two types of variation, and to make more self-conscious use of this knowledge in planning and conducting psychological research.

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INSTRUCTION IN THE USE OF TESTS

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FOLLOWING World War II the psychology department at UCLA was faced with a minor crisis in the instruction of students on the use of individual tests. This was in part because of an increased enrollment and increased interest among students in clinical psychology, industrial

psychology, and counseling and guidance. It was further aggravated by the State Board of Education's authorization of two new forms of credential (school psychometrist and school psychologist) requiring specialized instruction in the use of tests with individuals.

At the time we had two undergraduate courses dealing with tests and measurement. The first semester of the sequence dealt largely with statistics, although students were required to read an introductory text on tests and testing. The second semester was supposed to deal with test theory in detail, acquaint the student with all the more commonly used tests, and teach him how to select, administer, and score tests, and interpret test findings. In addition to the undergraduate enrollment, both courses were required of all graduate students in psychology who had not taken them as undergraduates. With a maximum enrollment of 60 in the second semester course, we found that many undergraduates were being squeezed out of the course altogether and that graduate students in the clinical training program were often held up from one to three semesters because they had not yet learned how to give basic tests.

Our first step toward a solution was to make the practicum work of the second semester into a new course with one (later two) units of academic credit. This served two purposes. First, students who did not want or need work in test administration could get training at the theoretical level without it. Second, since two semesters of work were prerequisite to the practicum course, we had a basis for screening candidates for the latter course. While we do not make our selection on the basis of grades in the first two courses alone, we feel that we are justified in excluding from practical training students who have not demonstrated a certain minimal level of competence in dealing with statistical concepts and the basic principles of testing. Students may also be rejected on the basis of personality characteristics as observed in these classes and a brief screening interview. (It must be admitted on this point that we still have a long way to go in evaluating objectively the personality characteristics which are associated with good and poor examiners.)

This step reduced our teaching load for practicum training to between 20 and 30 students a semester. At this level we can take most, if not all, of the students who want this training and are, in our opinion, qualified for it. Some students must still wait a semester beyond the time when they would like to take the practicum course. All students must plan their work well in advance in order to encompass the three-course sequence before they graduate or (at the graduate level) enter

special training curricula. However, we feel that we have reached a practical compromise on these points.

We are still plagued, as we believe any practicum course in psychology is, by many problems. Most college and university administrations tend to lump psychology among the subjects which permit large numbers of students to be educated at low cost by placing an instructor before as many students as can be crowded into the larger rooms on campus. It apparently comes as an unpleasant shock to them when one requests money for materials, assistance, and space, especially if the number of students involved is, by their standards, relatively small.

Take the question of materials. We have attempted to meet the problem of low budget and high demand by concentrating most of the testing materials owned by the psychology department and its associated clinical services in a single room. In order to maintain an adequate stock check and to prevent "mysterious disappearance," it has been necessary to channel all access to tests by both staff and students through a student assistant who is available a few hours each day. Checkouts are limited to overnight periods and weekends. This is often inconvenient, but at least we know where tests are and how many blanks, etc. we have on hand.

Even so, we must ask students to buy approximately \$30 worth of testing supplies. This is a definite economic hardship for some students, who cannot afford the capital outlay even though they may recover some of it later by selling their used equipment. A rental system would cost the students less and would give the department additional testing material without cost. We could also use a greater variety of tests than we do now. The principal obstacle appears to be that such a practice would be a novelty to academic procedures and would therefore tend to produce nervous breakdowns in the accounting department.

Assistance is a special problem. We are inclined to agree with Thorndike that practice alone, without an evaluation of results, is unlikely to lead to improvement. In testing it is likely, moreover, to produce faulty techniques which are then endlessly perpetuated. We require students to hand in completely filled out and scored test blanks, any materials produced in the process of testing, their original notes on the subject's behavior during examination, and a comprehensive report on various

aspects of the test performance. These are scrutinized in detail. All errors are clearly indicated. Additional remarks, complimentary and otherwise, are by no means uncommon. Our objective is to return all reports as soon as possible so that the repetition of errors can be kept to a minimum. In order to do this we have had to set up and maintain rigorously a schedule of times at which reports are due.

The question of assistance becomes especially acute in connection with the need for supervision of test administration. Even by dividing the class into sections of not more than ten persons, it is difficult to observe each student more than once a semester. This is obviously not enough observation. In lieu of more assistants we have instituted the following procedure. Each week one student gives a test with the rest of the students in a section (and the instructor) watching. The students have previously been briefed on proper techniques of administration and are expected to be thoroughly familiar with the test manual. The observers take notes in duplicate on the procedure observed. One set of notes is given to the instructor and the other is kept by the student. There is then a general critique of the performance observed. The sets of notes given to the instructor are evaluated by him, graded, and returned the following week.

A supplementary technique is to encourage students to write questions from their own testing experience and submit them to the instructor. Such questions are answered in detail for the individual student, and problems of general interest are discussed with the class. This seems to help the students. It also helps the instructor by pointing up deficiencies in instructional procedure and content.

Unless UCLA is completely atypical, we hardly need to mention that adequate observation raises problems of space as well as assistance. We are perhaps fortunate in having a room which will hold nine observers and permit viewing through a "one-way" mirror. Visibility and audibility are far from ideal, however, and ventilation is so poor that the observation room is more commonly referred to as "the sweat box." For these reasons the instructor has been able to rationalize his presence in the testing room, although this tends to make both subjects and examiners somewhat ill at ease. A common affliction of our students is a syndrome known as the observation shakes.

We have not yet solved, and at the moment cannot foresee a solution to, the problem of obtaining subjects for our student examiners. Schools, the most logical source of supply, are apt to be less than completely cooperative. In order to maintain a necessary minimum of cooperation for purposes of research, we have had to make an inviolate rule that no student tester may approach public schools to obtain subjects for testing. Since we also prohibit students from discussing test results with parents or any other persons, we obviously have created a very difficult situation for them. Most drop-outs of students from the practicum course are attributable in one way or another to the difficulty of obtaining subjects.

If any of the readers of this article have suggestions for handling this problem or the others raised, they are urged to communicate with the writer, who volunteers to serve as a clearing center for this sort of information.

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SUPERVISORY AND ADMINISTRATIVE CLINICAL PSYCHOLOGISTS IN U. S. PSYCHIATRIC HOSPITALS

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THE objective of this survey was to obtain personnel data on governmental and non-governmental positions in clinical psychology requiring supervisory and/or administrative duties. Specifically, information was sought on job titles, salary ranges, minimum education and experience

requirements, working hours, provisions for retirement, private practice privileges, and other similar factors.

In December 1952, a request for information was sent to all state and territorial personnel agencies of the United States listed in the 1952-1953

*Book of States*¹ and to 28 large private psychiatric hospitals and clinics. In part, the following were asked for:

1. Class specifications for any position of clinical psychologist involving supervision of three or more psychologists and/or the development of psychological programs in hospitals or out-patient clinics. This may involve more than one level.
2. Salary rates for each class, including any cost-of-living adjustments, housing or food at special rates, overtime, retirement features benefiting employees, etc.
3. Number of hours regularly worked.
4. Opportunity for private practice after working hours.

Where a state had no central personnel agency, the request was directed to individual facilities. If no reply had been received by May 1953, a follow-up request was made.

The sampling of governmental facilities is probably representative; 85 per cent (58 out of 68) of those contacted replied. This is true on the state level only, since no consistent attempt could be made to sample the increasing number of municipal and county psychiatric facilities. The data are also limited largely to the classified civil service, but this is not a serious handicap since most clinical psychologists working for the states are covered by civil service. The major exception is psychologists holding faculty appointments in medical schools, and these positions are not included in this survey. While 71 per cent (20 out of 28) of the private hospitals and clinics replied, they had so few supervisory and/or administrative psychologists that we abandoned this part of the study. The staff patterning of clinical psychologists in these facilities seems to involve one, or at most two, psychologists attached to a particular area of clinic or hospital functioning and nominally responsible to a psychiatrist.

For the states, the territories, and the United States government, 24 jurisdictions, or 41 per cent of those replying, indicated that they had psychologists administering or supervising psychological programs. (See Table 1.) Thus much less than half of the public jurisdictions sampled have psychologists who participate in policy making, planning, review, training, consultation, and similar administrative functions in their psychological programs. This paucity occurs despite the considerable number of psychologists involved in the individual jurisdictions. The reasons may possibly be

found from among the following: (a) Clinical psychologists are frequently responsible to psychiatrists or other medical personnel rather than to psychologists themselves. (b) In any jurisdiction, clinical psychologists may be widely distributed geographically, thus making communication difficult. (c) Local superintendents seek administrative autonomy in the regulation of their facilities and tend to resist staff as opposed to line administration. (d) Administration and/or supervision of psychological programs by psychologists occur more frequently than is apparent, but go unrecognized and unrewarded in formal classification systems.

The distribution of supervisory and/or administrative psychologists seems to follow upon economic and geographic lines, and is also governed to some extent by the progressiveness of the jurisdiction. While exceptions are evident, highly populated and thus relatively wealthy states in the northeast, north central, and far western areas which have progressive mental hygiene and treatment programs tend to have psychologists on the supervisory and administrative level. The United States government is, of course, in a class by itself with a high degree of organization.

There seems to be little agreement on classification titles judging from Table 1, although the duties involved in the classes are similar if class specifications can be used as a criterion. Chief, senior, supervising, director, executive are all used, as well as grade designations such as Clinical Psychologist III, Clinical Psychologist IV, etc. There is obvious need for standardization here.

The salary ranges vary from \$4,200 to \$10,800 for the entering step to \$4,800 to \$11,800 for the final step in the range (Table 1). The mean salary is \$5,905, with a standard deviation of \$1,637 for the entering step; \$7,229, with a standard deviation of \$1,591 for the final step. Since the United States government has considerably higher scales than other jurisdictions, means and *SD*'s were also calculated without the federal data. The means are \$5,510, standard deviation \$1,118, and \$6,870, standard deviation of \$1,169, for entering and final steps, respectively. These figures are underestimations of true salaries since subsidies in the form of housing and maintenance at special rates are often available. In the case of Idaho this becomes quite substantial.

The differences in salaries for psychologists performing similar supervisory and/or administrative

¹ *Book of States, 1952-1953.* Chicago: Council of State Governments, 1952.

TABLE 1
CLASSIFICATION, SALARY RANGE, AND EDUCATION AND EXPERIENCE REQUIREMENTS FOR SUPERVISORY
CLINICAL PSYCHOLOGISTS

Jurisdiction	Classification	Salary Range	Entrance Requirements*
U. S. Civil Serv. Comm.	Supv. Clin. Psychol. GS 13	8,360-9,360	PhD, 4 yrs. exp.
	GS 14	9,600-10,600	PhD, 5 yrs. exp.
	GS 15	10,800-11,800	PhD, 6 yrs. exp.
Alabama	Clin. Psychol. II	5,040-6,300	Coll. grad., grad. courses to PhD level, considerable exp.
California	Supv. of Clin. Psychol.	6,672-8,112	2 yrs. grad. training, 3 yrs. exp.
Colorado	Psychol. II	4,440-5,040	1 yr. grad. study, 3 yrs. exp.
Connecticut	Dir. Psychol. Lab.	5,760-7,560	12 yrs. employment or training in psychol., 4 yrs. of which in clin. psychol. or research
Delaware	Chief Psychol.	4,800-6,000	PhD, 5 yrs. exp.
Georgia	Chief Clin. Psychol.	6,540-8,100	MA, 3 yrs. exp.
Idaho	Chief Clin. Psychol.	3,600-6,900 (plus family maintenance)	PhD, some exp.
Illinois	Psychol. Exec.	5,760-8,640	PhD, 5 yrs. exp.
	Supv. Psychol. II	4,320-6,600	Either PhD, 1 yr. exp., or MA, 3 yrs. exp.
Indiana	Psychol. XIII	4,500-6,420	PhD, or equiv., 2 yrs. exp.
Kansas	Clin. Psychol. III	6,360-8,160	PhD, 4 yrs. exp.
Kentucky	Psychol. IV	4,320-5,280	PhD, 3 yrs. exp.
Maryland	Chief Psychol.	4,860-6,075	PhD, 2 yrs. exp.
Michigan	Psychol. III	4,848-6,000	PhD, or MA and 3 yrs. exp.
	Psychol. IV	5,904-7,056	PhD, 2 yrs. exp. or MA, 5 yrs. exp.
Minnesota	Clin. Psychol.	6,792-7,632	PhD course work, 1 yr. exp.
	Clin. Psychol. Supv.	7,272-8,112	PhD, sev. yrs. exp.
Montana	Sr. Psychol.	4,200-4,800	PhD or equiv., 2 yrs. exp.
New Hampshire	Chief Psychol.	4,440-5,280	PhD, 3 yrs. exp.
New Jersey	Chief Psychol.	6,600-8,100	PhD, 5 yrs. exp.
	Psychol.	4,980-6,180	PhD, 4 yrs. exp.
New York	Sr. Clin. Psychol.	4,964.67-6,088.32	PhD, 2 yrs. exp.; or 30 grad. units, 5 yrs. exp.; or 60 grad. units, 3 yrs. exp.
	Supv. of Psychol. Intern Prog.	6,088.32-7,421.95	PhD, 5 yrs. exp.
North Carolina	Clin. Psychol. III	5,556-6,564	PhD, 4 yrs. exp.
Ohio	Psychol. III	5,520-6,600	Extensive specialized and general exp.
Virginia	Psychol.	5,048-6,272	1 yr. grad. study, 4 yrs. exp.
Wisconsin	Psychol. IV	6,300-7,260	Grad. training, 4+ yrs. exp.
Hawaii	Sr. Clin. Psychol.	8,800-9,800	PhD, 5 yrs. exp.

* For tabular purposes only quantitative education and experience requirements are given. In many instances specialized experience in certain areas, e.g., administration, psychotherapy, etc., is a requisite and substitution of experience for education, and education for experience, is permitted.

duties are rather startling. The mean salaries of the states and territories are also widely divergent from the federal government scales. Also, these differences are not necessarily correlated with superior training or experience. Whatever the attractiveness of the Veterans Administration, for example, as an employer of clinical psychologists, the stipend offered is clearly one inducement. The basis for these wide salary differences is speculative but involves the general economic condition of the state, the relative availability of tax funds for psychiatric treatment, prevailing wage levels in the recruitment area, the supply of clinical psychologists, the geographic location, etc.

We were interested in the requirements for these positions, and they have been reduced to simple denominators in Table 1. Of those jurisdictions having supervisory and/or administrative psychologists, only 62 per cent ask for the PhD or its equivalent. Forty-five per cent make the PhD mandatory. Only 52 per cent require supervisory or administrative experience. Our data also reveal that only one jurisdiction specifies the desirability of diplomate status by the American Board of Examiners in Professional Psychology, Inc.

Few clinical psychologists are required to work more than 40 hours a week even on the supervisory and administrative level. A fortunate few work less than 40 hours a week! Salary range is not positively related to hours of work and may even show some negative relationship.

Almost all jurisdictions have some form of retirement system. Their adequacy is beyond the scope of this paper.

The prevailing policy on private practice is somewhat confused with few personnel jurisdic-

tions indicating either positive or negative opinions. Many content themselves with the statement that the statutes neither permit nor prohibit it, and they are usually left to the local administrator to enforce. Quite frequently it was held that private practice was permissible if it did not interfere with official duties.

CONCLUSION

The importance of an administering or supervising psychologist to a psychiatric program in governmental psychiatric hospitals seems to have been somewhat overlooked possibly because of the youthfulness of the profession, the dispersion of psychologists, and the delegation of administrative responsibilities to medical personnel. Salaries vary widely for comparable duties and appear below prevailing rates for supervision and administration in industry and commerce and probably also in university departments.

Since supervisory and administrative psychologists are key figures in establishing selection, training, and operating policies for many other psychologists, greater attention should be paid to the definition of their role and to their own selection and training. Here the American Psychological Association could assist in standardization of titles and duties, equalization of salaries, and the definition of proper training for such roles. Diplomate status by ABEPP assumes value as it is recognized by the jurisdictions as providing superior qualifications and is rewarded as such. This is apparently not yet true in so far as our data are indicative.

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Register now for the Fourteenth International Congress of Psychology

NEEDED RESEARCH ON GIFTED CHILDREN

DIVISION 16 SUBCOMMITTEE ON NEEDED RESEARCH ON GIFTED CHILDREN

MANY social scientists are concerned with the welfare and development of gifted individuals. There has been much research on retarded children and on children with behavior problems but relatively little is known about the gifted child. It is the conviction of the Subcommittee on Needed Research on Gifted Children that society cannot afford to block or damage the functioning of gifted children; if they function at their optimal level, they undoubtedly constitute one of the major reservoirs of real wealth in the country.

The Subcommittee has endeavored to locate and formulate troublesome, unanswered questions about gifted children, questions for which the lack of experimental answers is probably directly interfering with such children's receiving optimum guidance in homes, schools, and the community. Each psychologist who is interested in gifted children will undoubtedly make additions to this list of important and puzzling questions. The Subcommittee has studiously avoided shaping any experimental designs to explore these questions. Each experimenter's design will be his own. This report has been approved by Division 16's Committee on the Gifted, by its Executive Committee, and by the entire Division of School Psychologists. It is the hope of the Division that activities devoted to the developmental progress of gifted children and to their education may be lifted rapidly out of areas of uncertainty and controversy by way of an increasingly solid foundation of pertinent experimentation.

By gifted children, the Subcommittee means children whose rate of mental growth is 1.4 or 1.5 mental years per calendar year or faster.

The Subcommittee hereby submits questions concerning gifted children that in its judgment are urgently in need of research exploration. The experimental design and procedure are conceived of as being the province of the research worker to determine. It is anticipated that each of the questions listed below will prove to encompass a family of research projects.

1. Educational administrative procedures.
 - A. What are the relative merits (emotional, social, and intellectual effects) of various administrative plans for the gifted such as the following?
 - a. Keeping the child with his chronological age group and "enriching the curriculum."
 - b. Locating the individual close to his mental age level in school class with chronologically older children.
 - c. Retaining the child in his chronological age group for some subjects and advancing him in others.
 - d. Establishing special classes for children who have high rates of mental growth.
 - e. Utilizing no special administrative plan for the gifted.
 - B. What preceding or concomitant conditions can be recognized that are correlated with varying results from a given administrative plan such as any of the foregoing or any combination of such plans?
 - C. Which of these administrative procedures (or others not listed or any combination of procedures) has the best over-all results for the gifted child?
2. What is the effect (emotional, social, and intellectual) upon the gifted child of organizing his school work?
 - A. In terms of greater quantity of work of the same level of difficulty as that which he has been doing?
 - B. In terms of introducing additional new subject matter (both in classroom and extramural)?
 - C. In terms of advancing to higher levels of organization and abstraction in whatever experience is provided for him?
3. Relationship between ability and performance.
 - A. To what extent is there "concealed failure" among gifted children; that is, are they operating below their appropriate achievement level although not failing by the school's standards?
 - B. What personality correlates are there to such "concealed failure"?

- C. What factors have contributed to such "concealed failure"?
- D. What are the over-all effects of various procedures intended to raise the gifted child's performance to its optimum level?
- 4. What is the teacher's distinctive role in training the gifted?
 - A: What effects upon a gifted child result from various characteristics of his teacher?
 - B. Are special qualifications necessary in the teacher of the gifted and if so, what are they?
- 5. Life work.
 - A. Is it desirable or undesirable to explore vocational interests and aptitudes earlier in the life of the gifted child than in the life of other children?
 - B. What are the effects of beginning vocational planning and vocational preparation at various times in the life of the gifted child?
- 6. Personal relationships.
 - A. Do close personal relationships become established between children of widely different mental age?
 - B. Does the gifted child have to have companions at or close to his mental age in order to experience close personal relationships?
- 7. Special frustrations.
 - A. Are there special frustrations that impinge upon the gifted child that less often affect other children:
 - a. in his family,
 - b. in his neighborhood,
 - c. in the classroom,
 - d. in extracurricular activities,
 - e. in job placement?
- 8. Special satisfactions.
- A. Does the gifted child experience special satisfactions?
- B. If so, what are they and what are their effects upon the gifted child?
- 9. What factors account for any undesirable personality traits that may be found among the gifted?
- 10. Status as a group.
 - A. Do the gifted in effect constitute a minority group receiving some of the typical hostilities directed toward such a group?
 - B. What are the effects upon the gifted of such treatment when it does occur?
 - C. Are there recognizable elements in a community that attack gifted children?
 - D. What are the effects of various procedures instituted to make favorable changes in attitudes toward gifted children?
- 11. Does the gifted child have special needs with respect to his ultimately developing desirable citizenship traits, needs either in terms of the subject matter or in terms of the age at which subject matter (classroom and extramural) is introduced?

APA Division of School Psychologists,
Subcommittee on Needed Research
on Gifted Children:

GERTRUDE HILDRETH
GEORGE MYER
LEE MEYERSON
PAUL WITTY
HARRIET E. O'SHEA, *Chairman*

REPORT OF THE COMMITTEE ON SUBDOCTORAL EDUCATION¹

E & T BOARD COMMITTEE ON SUBDOCTORAL EDUCATION

FOLLOWING three meetings, and after considerable correspondence and discussion, the Committee on Subdoctoral Education presented to the Education and Training Board in April 1953, a report summarizing available information about subdoctoral training programs, defining questions the committee deemed relevant and

¹ This is an abstract of the Committee's complete report.

important, and making what it deemed to be appropriate recommendations.

The information collated by the committee indicated:

- 1. A substantial proportion of employed psychologists have less than doctoral training.
- 2. Geographical variations are found in the amount of training American psychologists have.

3. Psychologists employed in certain types of jobs tend to have more academic training as shown by the possession of doctoral degrees than psychologists employed in other types of jobs.

4. Far from perfect agreement is found among psychologists concerning the amount of training required for various kinds of psychological jobs.

5. There are wide differences among institutions providing training for subdoctoral psychologists.

Many of the questions pertaining to subdoctoral education and training are important in considering not only subdoctoral psychologists, but all psychologists. The selection, training, and placement of subdoctoral psychologists always must be considered along with similar problems pertaining to all psychologists, particularly those at the doctoral level. The committee considered one of the most important questions to be: "Who is a psychologist?" A working definition was tentatively adopted: "Psychologists are persons with graduate training in psychology who are employed in work of a psychological nature."

Once subdoctoral psychologists are identified, information should be obtained concerning their undergraduate and graduate training, their placement, and the kinds of work they perform. Related information should be obtained concerning facilities for training nondoctoral psychologists. What are the characteristics of current subdoctoral training programs? The effectiveness of a program is dependent upon the size of the instructional staff, the professional proficiency and teaching skill of the staff, library, laboratory, and practicum facilities available, the opportunities available for training in collateral fields, the quality of students admitted

to the training program, and the individualized teaching and guidance available to students.

Proposals considered were intended not to supplant the MA as an academic degree, but rather to prevent the use of the MA degree as an indication of competence in applied fields.

The committee recommended:

1. That a series of discussions be arranged in regional meetings for departments providing subdoctoral training in psychology.

2. That the Education and Training Board authorize a study of subdoctoral training curricula.

3. That the Education and Training Board communicate officially with the National Science Foundation projects of the American Psychological Association, informing them of the need for information regarding subdoctoral psychologists.

4. That the Education and Training Board communicate with officers of each APA division, informing them of the various interests of the Education and Training Board committees and requesting the names of divisional committees or members with similar or related assignments.

5. That individual departments be encouraged to develop and evaluate experimental subdoctoral programs.

The report of the Subdoctoral Committee was approved by the Education and Training Board.

ELIZABETH DUFFY

FRED MCKINNEY

MILTON A. SAFFIR

GEORGE S. SPEER

JAMES H. ELDER

LOUIS LONG

RALPH F. BERDIE, *Chairman*

NOMENCLATURE AND DEFINITIONS IN COLORIMETRY

LEO M. HURVICH

APA Representative to the American Standards Association

THE American Standards Association has approved and published a new American Standard, Nomenclature and Definitions in the Field of Colorimetry, Z58:1.2-1952. This standard, which is a glossary of optical and color terms, was sponsored by the Optical Society of America, and 24 organizations, including the APA, participated in its compilation. The stimulus for the

codification came originally from color television, and the interests of the associated organizations are primarily industrial and engineering.

The 11-page booklet contains about three and a half pages devoted to nomenclature and the definition of terms which are used in practical applications of color measurement. The definitions are grouped under five subsections: 1. General (Light,

Color), 2. Color-Mixture Data, 3. Chromaticity Diagram, 4. Luminators, and 5. Colorimetric Calculations. The 1931 C.I.E. Standard Observer color-mixture data and a table of relative luminosity factors are also included. (Because of the widespread reference to the Imperial Chemical Industries Ltd. as I.C.I. this abbreviation for International Commission on Illumination has now been abandoned in favor of C.I.E., Commission Internationale de l'Eclairage.)

Anyone unfamiliar with, but interested in, the measurement, specification, and description of color will find helpful background material in R. M. Evans' *An Introduction to Color* (New York: Wiley, 1948), D. B. Judd's *Color in Business, Science and Industry* (New York: Wiley, 1952), and in *The Science of Color* prepared by the Committee on Colorimetry of the Optical Society of America (New York: Crowell, 1953).

Probably of greatest interest to psychologists is the definition in this new standard of the word *color*. In the original 1922 report of the Colorimetry Committee of the Optical Society, with L. T. Troland, chairman, *color* was defined as a sensation, whereas in the new standard it is defined as a psychophysical concept analogous to that of light. *Light* is defined as "the aspect of radiant energy of which a human observer is aware through the visual sensations that arise from the stimulation of the retina of the eye . . ."; a note amplifying this definition says "Light is psychophysical, neither purely physical nor purely psychological. Light is not synonymous with radiant energy, however restricted, nor is it merely sensation." *Color* is in

turn defined as consisting of "the characteristics of light other than spatial and temporal inhomogeneities"; an explanatory note adds: "Inhomogeneities, i.e., particular distributions and variations of light, and characteristics of objects which are revealed by variations such as gloss, luster, sheen, texture, sparkle, opalescence, and transparency, are not included among the color characteristics of objects."

Such a definition of color requires, of course, a compound phrase like "color sensation" or "color perception" whenever subjective or experiential aspects are intended, and authors preparing manuscripts for journals whose editors work in terms of this standard and the Optical Society's 1953 report on colorimetry are soon made aware of this changed definition. An interesting and instructive historical account of the steps whereby the divergent and seemingly irreconcilable physical and psychological viewpoints of various members of the Optical Society Committee were resolved in the psychophysical definition of color is given by the chairman, L. A. Jones, in his introduction to *The Science of Color*.

Dr. H. Richard Blackwell was one of the nine members of Subcommittee 1 of Z58 on Nomenclature, which is responsible for the development of the standard, and Drs. Sidney M. Newhall and Henry A. Imus (Alternate) were the APA representatives at the time of its adoption.

The Standards Association welcomes suggestions for improvement in the standard. Copies of Z58: 1.2-1952 are available at \$.50 from the American Standards Association, Inc., 70 East 45th Street, New York 17, N. Y.

APA members who are planning to attend the Fourteenth International Congress of Psychology should register by March 31, 1954. Application forms were printed in the November *American Psychologist*, and they may also be obtained from the Congress Secretariat, Université de Montréal, Case postale 6128, Montreal, Canada.

Comment

Psychology—A Profession or What?

As we all know, our profession is very young in its practical applications, and we should be willing to learn from the experience of other professional groups that are already well established. The medical profession, to wit, came into its own by establishing minimal requirements in the form of the MD degree from approved universities. It followed that individuals awarded this degree were entitled to the designation *doctor*, were identified as physicians, and were respected as such by each other and by the public in the practice of general medicine. It took many years before sufficient knowledge was established in any one area to warrant the establishment of diplomate status in any special area of medicine. Thus, first, the medical profession established respect for their profession, in terms of minimal requirements, which enabled them legally to assure the public of their competence as general medical practitioners, and only then, after much cumulative practical and research experience, was enough proven knowledge accumulated in special areas to permit establishment of diplomate status in specialties. The law profession, the dental profession, accountants and others have all followed similar patterns of evolution and so are built on solid foundations.

Our group seems to be working backwards, sideways, and from the top down, rather than from the bottom up. Are we a profession or what? If a profession, then:

Let us first establish the doctoral level as the minimal requirement for any individual wishing to be classified and recognized as a psychologist. Let the public and other professions know that to be designated psychologist, a doctor's degree from an approved university is required. Let's establish a broad general core of functions for psychologists so that they may serve as general practitioners and let specialization emerge as adequate bodies of knowledge develop out of cumulative experience and research.

In the present state of our affairs, diplomate status seems to be a farce, in view of the fact that many individuals with diplomate status are not eligible for certification in many states. Why? Because these states have high standards. This is an enigma when one considers the fact that diplomate status was designed to indicate professional competence. Confused, aren't we? And if we are so confused, what can the public and the medical profession think of us? Who ever heard of a diplomate in obstetrics who couldn't qualify for licensure in any state? For that matter, any individual with an MD degree from an approved

medical school is qualified to apply for licensure in any state.

In my contacts with medical people, I have been impressed with the fact that they are inclined to be skeptical of any psychologist who does not carry the title "Doctor." They question whether such individual is competent and qualified, and in many cases they continue to doubt even when the individual has demonstrated his competence. My medical friends have explained to me that their group is attempting to supervise the field of mental health, not because the MD degree is a magic formula for competence, but because through the MD, as a legal minimal requirement, they are in a position to clear the field of quacks. Since we do not have minimal standards, members of our group become suspect, which weakens our position legally, and nullifies our efforts to eliminate the quacks. If anything, our failure to set up the doctor's degree (PhD or equivalent in rigorous discipline) as a minimal standard serves to encourage the multiplication of quacks.

Let's demonstrate that we are a respectable profession by setting high and consistent standards for our group, starting with the doctor's degree. Let's manifest respect for ourselves and each other and thus win the respect of other groups, even the medical profession.

LEAH GOLD FEIN
Greenwich, Connecticut

The Real Problem

I am indebted to Peter Kaufmann and Melvin E. Allerhand for their perceptive comment¹ on my "What Is the Real Problem?"² Surely there can be no disagreement with their statement that ". . . the counselor can err in *two* directions. He can either unduly dwell on those problems in which he is specially interested, or he can fail to see the relationship between the stated problem and the deeper conflicts. . . ."

We part company, however, when they conclude that greater self-knowledge will "enable" the counselor "to judge to what degree the stated problem is or is not the 'real' problem. . . ." I am afraid we shall need a great deal more research before we shall be justified in concluding that we know more than the client knows about what his "real" problem is. I do not assert that he knows more than we do. I just plead for caution when we are tempted to assume that we know more than he does, and for double caution when our assumption leads us into the areas where we feel either more interested or more comfortable.

¹ *Amer. Psychologist*, 1953, 9, 524.

² *Op. cit.*, 124.

By all means let us give the client every opportunity to recognize and reveal as many problems as he may have. If some of these problems involve emotional conflicts, let's face them. But let's stop attaching more importance to something obscure that we choose to call "deep" or "real" than we attach to the problem on which the client seeks our help, at least until we have more experimental evidence than we have now to support our tempting inferences.

To be sure, we usually know more about psychology than he does. But let us not forget that he has known himself a lot longer than we have known him. If we and he can pool our knowledge, with mutual respect and recognition of our own limitations, we may both get closer to the truth than either of us could alone.

ROBERT HOPPOCK
New York University

Psychological Newsletter

A letter came to me recently with the statement that the writer "had a horrible time finding out where the *Newsletter* was published." Luckily he met a person who subscribed and thus obtained my name. The incident, however, indicated to me that some other persons may be interested in knowing about the *Psychological Newsletter*.

About 5 years ago a group of my students were visiting my office at Christmas time. Naturally each one was interested in knowing what happened to his buddies as well as what kind of research they were doing, and so stories were told and retold for each arrival. One member suggested that a letter be put out once a month to disseminate such knowledge. The following spring, a one-page newsletter appeared under the editorship of Bernard Levy and was sent to the members, 20 in all. The size of the membership increased and the size of the paper increased. Marvin Zuckerman then took over as editor. Now the staff includes Donald Leeds as editor, Mark Mayzner, Jr. as associate editor, Ira Benjamin as treasurer, and the two former editors and I form the editorial board. For the past two years, the *Newsletter* has been copyrighted and abstracted in the *Psychological Abstracts*. The paper is now issued bimonthly and is approximately 30 pages in size, depending on the size and number of the articles published.

To be a member-subscriber, one pays \$2 a year starting in September, and for this amount he not only receives each issue of the *Newsletter* but he also may submit articles which, if accepted for publication, are published free of charge. He is also given 20 free offprints of his work. Many of the papers are master's theses, doctoral outlines, or small projects which graduate students are pursuing and which deserve publica-

tion cheaply and early. The lag in publication is only two to four months.

The *Newsletter* is a relatively unknown infant, but it can be reached through the Psychology Department, New York University, New York 3, N. Y.

M. E. TRESSELT
New York University

Psychology for Elementary Education Majors

For many years Ohio University students who are preparing to teach in the elementary schools have been required to take a course in educational psychology. Educational psychology is open to freshmen and sophomores on our campus and, in order to prevent premature specialization, our department long ago made general psychology a prerequisite for those who wish to take educational psychology. In effect this prerequisite meant that the majors in elementary education were required to take six hours of psychology.

Because this requirement seemed excessive to certain staff members of other schools on this campus, an effort was made to find out how other institutions handle this matter of psychology requirements for elementary education majors. Forty-two major American universities replied to a letter of inquiry. Four of the schools replied that they have no education training program, and are excluded from the sample. The following summary of replies from the remaining 38 includes courses offered *only by the psychology departments*:

Mean semester hours of psychology required.....	6.35
<i>N</i> schools requiring two or more psychology courses.....	30 (79%)
<i>N</i> schools requiring only one psychology course.....	4 (10.5%)
<i>N</i> schools requiring no psychology courses.....	4 (10.5%)

SPECIFIC COURSE REQUIREMENTS

Course	<i>N</i> Schools Requiring	% Schools Requiring	Mean Sem. Hrs. Required
General	26	68	3.6
Educational	22	58	3.0
Developmental	11	29	3.6
Child	9	24	3.4
Learning	3	8	3.0
Tests & Meas.	2	5	3.0

If psychology courses offered by departments other than psychology had been included in the foregoing summary the results would have differed only slightly. For the present Ohio University is continuing the six-hour requirement for majors in elementary education.

DUANE F. BLACKWOOD
HARVEY C. LEHMAN
Ohio University

Psychological Notes and News

Maria Brick died July 29, 1953.

F. C. Sumner, head of the department of psychology at Howard University, died January 11, 1954.

Dael Wolfle, who has been director of the Commission on Human Resources and Advanced Training, has been named the administrative secretary of the American Association for the Advancement of Science.

George D. Stoddard has accepted the chairmanship of the Directing Committee of New York University's Self Study, now being conducted under a grant from the Carnegie Corporation. After February 14, 1954 Dr. Stoddard will be giving full time to the study for seven months.

Henry W. Riecken, formerly lecturer in social psychology and research associate in the Laboratory of Social Relations at Harvard University, has been appointed associate professor of sociology at the University of Minnesota. A major portion of his time will be devoted to research, and he will also hold an appointment in the Laboratory for Research in Social Relations at Minnesota.

Solomon E. Asch of Swarthmore College and Cora DuBois of the Institute of International Education will be visiting lecturers at the University of Colorado during the first term of the 1954 Summer Session.

Robert H. Knapp, associate professor of psychology at Wesleyan University, is now the deputy director of the Behavioral Sciences Division of the Ford Foundation.

John V. Quaranta, formerly assistant professor at Manhattan College, has been appointed chairman of the department of psychology and director of guidance at Marymount College.

Leonard C. Mead, coordinator of research and chairman of the department of psychology, has been elected dean of the Tufts College Graduate School. He succeeds John P. Tilton, who was recently elected vice-president and who since 1951 has been provost at Tufts.

P. S. de Q. Cabot has opened the office in London of the P. S. de Q. Cabot & Company, serving British and American clients, as a management consultant, specializing in management development, executive selection, organization planning, management audits, training programs, etc., and general psychological services.

Molly R. Harrower, clinical psychologist of New York City and director of the Research Program of the Court Intake Project of the Family Relations Court of New York City, has accepted an appointment as lecturer in clinical psychology at the University of Texas Medical Branch, Galveston, Dr. Harrower will be in residence in Galveston for several weeks in February and March of each year.

Harry W. Braun is now assistant professor of psychology at the University of Pittsburgh.

Salvatore G. DiMichael has been appointed to the new position of Executive Director, National Association for Retarded Children. The purposes of the organization are to promote the general welfare of the mentally retarded of all ages at home, in the community, or in schools and institutions; to further research; to further the training of personnel in all phases of the work; to encourage the formation of parents' groups; to implement legislation, and to serve as a clearinghouse for gathering and disseminating information regarding the mentally retarded. Dr. DiMichael formerly was Psychological Consultant in the Office of Vocational Rehabilitation, U. S. Department of Health, Education, and Welfare.

Robert Allen Keith, formerly of the Los Angeles Psychiatric Services, has been appointed assistant professor of psychology at Claremont Graduate School. He is also director of the Associated College Psychological Clinic and Counseling Service serving Pomona College, Scripps, Claremont Men's College, the Graduate School, and the Claremont City Schools.

J. E. W. Wallin has been elected an honorary life member of Psi Chi.

Edwin Lawson, formerly an instructor at the University of Buffalo, is now an instructor in the department of psychology at Beloit College.

Elliott R. Danzig has been named executive director of the Institute for Research in Human Relations. He was formerly Philadelphia regional director of Richardson, Bellows, Henry & Company. **F. K. Berrien** is now director of research at the Institute.

The psychology department of the **Norfolk (Nebraska) State Hospital** now consists of the following: **Walter G. Klopfer**, chief clinical psychologist; **Earl S. Taulbee**, assistant chief clinical psychologist; **Gertrude J. Williams**, clinical psychologist; **William Reiss** and **Isaac Rebner**, interns in clinical psychology.

The **West Queens Guidance Center**, Woodside, New York, opened last September. It is licensed by the New York State Department of Mental Hygiene, and is under the supervision of **Harry A. LaBurt**, director of Creedmoor State Hospital. The community-supported center offers its services free to families that cannot afford to pay for private help. The staff consists of **Hans Peter Laqueur**, psychiatrist from Creedmoor State Hospital; **Alaine Krim**, psychiatric social worker; and **Samuel Baron**, clinical psychologist.

Veterans Administration Roster, Department of Medicine and Surgery. This roster is complete as of January 1, 1954. Included are 476 clinical psychologists and 37 counseling psychologists. The latter are designated by a (Co).

Central Office

Harold M. Hildreth, Chief, Clinical Psychology Division
J. Quinter Holsopple, Chief Research Psychologist
H. Max Houtchens, Chief Consulting Psychologist
Robert S. Waldrop, Chief, Vocational Counseling

Area Offices

<i>Area Chief Clinical Psychologist</i>	<i>States and Territories in Area</i>
Howard White Area Medical Office c/o VA Regional Office Boston 8, Massachusetts	Connecticut, Maine, Massachusetts, New York, New Hampshire, Vermont, Rhode Island
N. Norton Springer Area Medical Office c/o VA Regional Office 1825 H Street, N.W. Washington 25, D.C.	Delaware, District of Columbia, Indiana, Kentucky, Maryland, New Jersey, Ohio, Pennsylvania, Puerto Rico, Virginia, West Virginia
Carl Altmaier Area Medical Office 441 W. Peachtree Street Atlanta 3, Georgia	Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee

W. S. Phillips
Area Medical Office
c/o VA Regional Office
415 Pine Street
St. Louis 2, Missouri

William Hales
Area Medical Office
c/o VA District Office
Fort Snelling
St. Paul 11, Minnesota

Wendell R. Carlson
Area Medical Office
c/o VA Regional Office
49 Fourth Street
San Francisco 3, California

Arkansas, Colorado, Kansas, Louisiana, Missouri, New Mexico, Oklahoma, Texas

Illinois, Iowa, Michigan, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Wisconsin, Wyoming

Alaska, Arizona, California, Hawaii, Idaho, Nevada, Oregon, Utah, Washington

Stations

VAH—VA Hospital

VARO—VA Regional Office

VAO—VA Office (Subregional)

VAC—VA Center (Combined activity such as hospital and domiciliary, hospital and regional office, etc.)

(MHC)—Mental Hygiene Clinic

(NP)—Predominantly Neuropsychiatric

(GM)—Predominantly General Medical and Surgical

(TB)—Predominantly Tuberculosis

(DOM)—Domiciliary

The mailing address of each station consists of its name and designation, e.g., VA Hospital, Tuscaloosa, Alabama; VA Regional Office, Phoenix, Arizona; VA Center, Los Angeles, California; VA Office, Bridgeport, Connecticut. The title "Dr." should be used throughout.

Asterisk (*) denotes administrative head.

Alabama

Tuscaloosa VAH (NP)

***Martin J. Brennan**
John K. Kew

Tuskegee VAH (NP)

***Alvis W. Caliman**
Jesse J. Johnson
Eric Layne

Arizona

Phoenix VAH (GM)

***Aaron H. Canter**
Marvin S. Weinstein

Tucson VAH (TB)

***Gildas E. Metour**

Little Rock VAH (GM)

***Francis D. Jones**

Little Rock VARO (MHC)

***Jerome Schiffer**

North Little Rock VAH
(NP)

Philip S. Henderson
Oddist D. Murphree

***Henry Peters (Acting**
Chief Neuropsychiatric
Research Unit)

***Frederick W. Schnadt**
Charles E. Thompson

Arkansas

Fayetteville VAH (GM)

***Carl S. Wright**

Fresno VAH (GM)

***Wayne W. Wisham**

Livermore VAH (TB)
 *Roger E. Bardsley
 Long Beach VAH (GM)
 Howard H. Fink (Co)
 H. Elston Hooper
 *Frank J. Kirkner
 *Morse P. Manson (Co)
 Charles F. Mason
 Hamilton M. Moody
 Charlyne Storment Seymour
 Samuel Wexler (Co)
 Los Angeles VARO (MHC)
 Norman L. Farberow
 Bertram R. Forer
 *Mortimer M. Meyer
 Vita S. Sommers
 Ruth S. Tolman
 Los Angeles VAC (NP)
 Gertrude Baker
 *Harry M. Grayson
 Gertrude S. Harrow
 Leon I. Hellman
 Walther Joel
 Charles R. Kessler
 Carl H. Saxe
 *George F. Seacat (Co)
 Edwin S. Shneidman
 (GM)
 *Phillip A. Goodwin
 (DOM)
 DeVere G. Arnold
 Bernaur W. Newton
 *Frank Risch
 Oakland VAH (GM)
 *Albert Kostlan
 *Karl V. Schultz (Co)
 Palo Alto VAH (NP)
 Glen A. Brackbill
 Ben C. Finney
 *William R. Grove
 Richard C. Hamister
 Robert L. McFarland
 Paul W. McReynolds
 Starling D. Schultz
 *Clare W. Thompson (Chief, Training Unit)
 San Diego VARO (MHC)
 *Wallace V. Lockwood
 San Fernando VAH (TB)
 *Barbara M. Stewart
 Shalom E. Vineberg
 San Francisco VAH (GM)
 Jack Blumenkrantz
 *Jerome Fisher
 San Francisco VARO (MHC)
 Florence M. Henderson

Ann S. Miller
 Christine M. Miller
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 *Richard Sears
 Oakland VAO (MHC)
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 *Patrick L. Sullivan
 Colorado
 Denver VARO (MHC)
 Rose Brenner
 *Lawrence S. Rogers
 James W. Taylor
 Denver VAH (GM)
 *Delano L. Bender (Co)
 Lewis Bernstein
 *Howard L. Siple
 Fort Lyon VAH (NP)
 *Lee Gurel
 Connecticut
 Hartford VARO (MHC)
 Irving H. Frank
 *Philip W. Morse
 Bridgeport VAO (MHC)
 *Larry Hemmendinger
 Newington VAH (GM)
 *Paul D. Park
 West Haven VAH (GM)
 Julius Laffal
 *Jacob Levine
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 Delaware
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 *Harry Martin
 Illinois
 Chicago VAH (GM)
 Harold Klehr
 *Meyer Williams
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 Bernard Gold
 *Ralph W. Heine
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 *Kenneth C. Jost
 Downey VAH (NP)
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 Melvin Perlman
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 Charles F. Reed
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 J. Wilson Young
 Hines VAH (GM)
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 *Roy Brener
 David Grauer
 Mary Grier Jacques
 Roderick W. Pugh
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 *Robert G. Gibby (Chief, Training Unit)

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 Frederick J. Heimlich
 *Durand F. Jacobs (Co)
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 Lynn K. Roberts
 (GM)
 *S. J. Williamson, Jr.

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 Edwin Cohen
 Knoxville VAH (NP)
 David S. Goodenough
 *Leroy A. Goodrich (Co)
 *Mordecai H. Gordon
 Wilson H. Guertin
 Arnold D. Krugman
 Vernon K. Lum
 Theodore T. McKnelly

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 John W. Chotlos
 Leon B. Cohen
 John B. Deiter
 Herman Feifel
 *William C. Hallow
 Ernest A. Hirsch
 Leonard Horwitz
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 Bartley E. Bess (Co)
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 *Neil W. Copfinger
 *M. F. Hyde (Co)
 Wichita VAC (GM & MHC)
 *Edward T. Weston
 Wichita VAH
 *James W. D. Hartman

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 *Thelma E. Brown
 Lexington VAH (NP)
 Richard M. Griffith
 Elizabeth Z. Johnson
 *Edwin H. Richardson (Co)
 *A. Dudley Roberts
 Louisville VAH (GM)
 Vera E. Kennedy
 *Joe L. Lawson

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New Orleans VAH (GM)	Robert W. Baker	Claude S. Moss	Albany VAH (GM)
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New Orleans VARO (MHC)	John F. Winne	C. Kermit Phelps	*Leo Shatin
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*Anthony R. Hybl		St. Louis VARO (MHC)	Joseph J. Silva
<i>Maine</i>		Stanley Goldstein	Bronx VAH (GM & MHC)
Togus VAC (NP)		*Arnold H. Hilden	Benjamin Blatt
*Euclid A. Helie			William E. Block (Co)
<i>Maryland</i>			Nathan Boxer
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Clinton C. Brown		Lincoln VARO	Leonard Bernstein
Roy E. Buehler		Omaha VAO (MHC)	Albert Greenberg
Mildred E. Gebhard		*Stanley Moldawsky	Sol Levine
F. Harold Giedt			Carl Newman
*John L. Holland (Co)			*Herman R. Weiss
Richard Sanders		New Hampshire	Brooklyn VARO (MHC)
John R. Schlosser		Manchester VARO (MHC)	Elias N. Abrams
Gideon B. Stone		*Walter F. St. Clair	Irving Barnett
*James A. Waites			Gerald Bauman
<i>Massachusetts</i>		New Jersey	Catharine A. Burnham
Bedford VAH (NP)		East Orange VAH (GM)	Irving Handelsman
*Norman T. Bowes		Leonard S. Abramson	Joseph Katz
Edward T. Davis		Erasmus L. Hoch	Melvin Kornreich
Samuel Grob		*Henry Kavkewitz (Co)	*Bernard Locke
Herbert Lipton		*Samuel B. Kutash	Sidney Pally
Boston VAH (GM)		Bernard Mirin	Louis M. Rosenberg
Ralph W. Fingar		Harry Rockberger	Selig Rosenberg
Angela Q. Folsom		Lyons VAH (NP)	Buffalo VAH (GM)
Merton H. Friedman		Marianne Beran	Roger B. Bernhardt
Harold Goodglass		*Louis Delman	Benjamin Fabrikant
Robert Misch		William Hirschman	Alfred E. Pomerantz
*Donald A. Ramsdell		David Levine	*Herman J. P. Schubert
*Harold J. Wilson (Co)		John E. Tucker	(Co)
Boston VARO (MHC)		Newark VARO (MHC)	*Martin G. Staiman
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Avrom A. Leve		Renata A. Calabresi	Joseph W. House
*J. Warren Thiesen		Esti Freud	John C. Perkins
Brockton VAH (NP)		E. Louise Gaudet	*Joseph R. Sanders
Richard S. Ball		Pearl Greenberg	Rochester VAO (MHC)
*James F. Lawrence		Morris Goodman	*Daniel C. Broida
Henry N. Riccuti		*James S. Simkin	Canandaigua VAH (NP)
*Bernard A. Stotsky (Co)		Trenton VAO (MHC)	Benton E. Barringer
Robert G. Walker		*Arthur Teicher	Libby Blek
Lowell VAO (MHC)			*Benjamin F. McNeal
*Miriam C. McCue		New Mexico	Castle Point VAH (TB)
		Albuquerque VAH (GM)	*Daniel Casner
		*Juanito A. Salazar	Montrose VAH (NP)
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		*Charlotte H. Dosier	Ralph W. Colvin
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Pauline G. Vorhaus	Robert D. Sinclair	*Margaret B. Barker	Waco VAH (NP)
Samuel J. Warner	James H. Terry	Columbia VARO (MHC)	Verner S. Brugh
Northport VAH (NP)	Glenn E. Wright	*Robert A. Ferguson	Donald R. Gorham
Norman Beck	<i>Pennsylvania</i>	<i>South Dakota</i>	*Ruth M. Hubbard
*Max Cooper	Altoona VAH (GM)	Fort Meade VAH (NP)	A. J. Jernigan
Jack Dworin	*Glenn W. Rieman	*Robert E. Royal	T. S. Ray
Melvin M. Katz	Aspinwall VAH (GM)	Donald W. Sydow	Mac Sterling
Harold A. Levine	*S. Thomas Cummings	Hot Springs VAC (GM & DOM)	<i>Utah</i>
*Stanley D. Needleman (Co)	Butler VAH (TB)	*Richard N. Filer	Salt Lake City VARO (MHC)
Stanley S. Schwartz	*Ralph Simon	Sioux Falls VAC (GM)	*John M. Landward
Syracuse VARO (MHC)	Coatesville VAH (NP)	*Joel M. Canter	Salt Lake City VAH (NP)
*John D. Breish	*David Cohen	<i>Tennessee</i>	Ernst G. Beier
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*Howard Friedman	Samuel F. Klugman (Co)	Milton C. Addington	Robert B. Ellsworth
Edward L. Siegel	*John C. Phillips (Co)	*Alfred R. Mueller	Glen D. Garman
<i>North Carolina</i>	Donald P. Schmidt	Don L. Winfield	H. Birnet Hovey
Durham VAH (GM)	Emanuel Starer	Memphis VAH (TB)	James E. Mabry
*George T. Lodge	Erie VAH (GM)	*Joseph Newman	*Carroll A. Whitmer
Fayetteville VAH (GM)	*Frank J. Pizzat	Murfreesboro VAH (NP)	John W. Whitmyre
*Albert A. Branca	Lebanon VAH (NP)	*Jack S. Griffiths	<i>Virginia</i>
Oteen VAH (TB)	*S. Charles Ficca (Co)	Nashville VAH (GM)	Kecoughtan VAC (GM & DOM)
*Carlton E. Wilder (Co)	Harold Rubin	Irving Bialick	Richard G. Murney
<i>Ohio</i>	Leo Schneiderman	Beatrice I. Bryan	*Benjamin Winsten
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 *Ramona Messerschmidt

Vancouver VAH (GM)
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The Walter VanDyke Bingham Lecture for 1953-54 is to be delivered by Lewis M. Terman at the University of California at Berkeley on March 23, 1954. The title of the lecture is "The Discovery and Encouragement of Exceptional Talent." The lecture is provided by Mrs. W. V. Bingham in honor of, and to carry out the wishes of, her late husband.

International Child Psychology Days will be held in Paris on April 21 to April 26, 1954, under the presidency of Henri Wallon and the sponsorship of the Laboratoire de Psychobiologie de l'Enfant and the periodical *Enfance*. On the first day there will be reports on instruction and child psychology in various countries. On the following days there will be discussions on "The Value of Psychology in Pedagogy," and "The Child's Social Life." For further information write to the Secrétariat Général des Journées Internationales de Psychologie de l'Enfant, 41, rue Gay-Lussac, Paris (5^e).

The RAND Corporation in Santa Monica, California, is assisting the Air Defense Command, USAF, in the development of a training program based upon certain aspects of the research carried

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 Robert Callahan
 *Samuel H. Friedman

Wyoming
 Sheridan VAH (NP)
 Warren K. Garlington
 *Cecil P. Peck

out in the Systems Research Laboratory at RAND during the past several years. The project involves applications of psychological, electronic, and high-speed computer techniques. The psychology group working full or part time on this project has been enlarged and now consists of John L. Kennedy, director; William C. Biel, assistant director; and Robert L. Chapman, Allen Newell, Milton G. Weiner, Lawrence T. Alexander, Robert Boguslaw, Harry W. Harman, Richard S. Hirsch, Norton Kristy, Toby Oxtoby, Harold A. Sackman, and Willis C. Schaefer.

National Science Foundation Research Grant Awards. The following research grants have recently been awarded:

Albert F. Ax, University of Washington: \$17,200 for a 3-year study entitled "Investigations of Human Reactions to Stress."

Joseph H. Grosslight, Pennsylvania State University: \$7,600 for a 2-year study of "The Role of Reinforcement in Learning."

Harold Gulliksen, Princeton University: \$24,400 for a 3-year study of "Mathematical Techniques in Psychology."

Howard H. and Tracy S. Kendler, New York University: \$14,100 for a 2-year study entitled "Research on Problem-Solving Behavior."

Gregory Kimble, Duke University: \$6,100 for a 2-year study entitled "Research in Avoidance Learning."

Don Lewis, State University of Iowa: \$11,700 for a 2-year study entitled "Research on Perceptual-Motor Tasks."

Melvin Marx, University of Missouri: \$8,400 for a 2-year study entitled "Experimental Analysis of Food-Hoarding Behavior."

Wallace R. and Dorothy E. McAllister, Syracuse University: \$12,300 for a 2-year study of "Eyelid Conditioning and Generalization of the Conditioned Eyelid Response."

Donald A. Riley, University of California: \$3,400 for a 1-year study entitled "Research in Rote Learning."

L. L. Thurstone, University of North Carolina: \$17,700 for a 2-year study entitled "Research in Multiple-Factor Analysis."

John Volkman, Mount Holyoke College: \$9,800 for a 2-year study entitled "Research in Visual Perception."

Francis A. Young, Washington State College: \$11,400 for a 2-year study entitled "A Systematic Investigation of Pupillary Conditioning."

Karl Zener, Duke University: \$11,800 for a 2-year study of "Visual Perception of Spatial Relationships."

March 1, 1954 is the closing date for the receipt of proposals for the spring meeting of the Advisory Panel to the Psychology Program of the National Science Foundation. It is anticipated that action on these proposals will be completed within two months after the closing date. A suggested guide for the submission of research proposals may be obtained by writing to The National Science Foundation, Washington 25, D. C.

A special grant has been made to the Institute of Psychological Research, Teachers College, Columbia University to study the drawings of human figures by normal children in the age range 5 to 18 years. The investigation is directed primarily toward appraising personality aspects as a means of utilizing the drawings diagnostically. Each child is requested to draw a figure of his own sex and also of the "self." A developmental scale of these drawings has been completed with a gestalt orientation based on the maturity of representation. One of the major by-products has been a scale for the measurement of intelligence of boys and another for the measurement of intelligence of girls. Michael B. Dunn is working as research associate on the staff of the Institute in cooperation with Irving Lorge, its executive officer.

The American Board of Examiners in Professional Psychology, Inc., conducted oral examinations at Los Angeles, Chicago, and New York City during the calendar year 1953.

The total oral examination included a Professional Field Situation and the following four parts:

I. Client Relations:

A. Diagnosis or evaluation. (The definition of the problem confronting the professional psychologist)

B. Therapy and/or recommendations. (How to deal with the professional problem)

II. Scientific and Professional Relations:

C. Skill in the interpretation and use of research findings. (What valid knowledge exists regarding problems faced by the professional psychologist. How valid knowledge is obtained)

D. Organization and administrative problems of professional psychology. (What are the conditions of professional practice?)

The Board wishes to express its appreciation to the following diplomates who served as members of its oral examining teams for the above mentioned examinations: Frances S. Alexander, Benjamin Balinsky, Nancy Bayley, Samuel J. Beck, Hedda Bolgar, L. E. Drake, Roy M. Dorcus, Jon Eisenson, Erika Fromm, Florence D. Halpern, Henry G. Hansburg, Albert J. Harris, Howard F. Hunt, William A. Hunt, Seymour G. Klebanoff, Samuel B. Kutash, Bernard Locke, Solomon Machover, Mortimer M. Meyer, James G. Miller, Robert S. Morrow, Julian H. Pathman, Z. A. Piotrowski, Carl R. Rogers, Alan K. Rosenwald, Audrey S. Schumacher, Georgene H. Seward, Keith Sward, Percival M. Symonds, Clare W. Thompson, Evelyn Troup, and Ruth Valentine.

The American Board of Examiners in Professional Psychology, Inc., on November 12-13, 1953 administered its fifth written examination to 60 candidates at 26 examining centers in the United States.

The Board wishes to express its appreciation to the following diplomates who served as proctors for its fifth written examinations: Clifford R. Adams, Dwight L. Arnold, Arthur W. Ayers, Virginia Lee Block, James F. Bugental, Herman Feifel, John V. Gilmore, Roy M. Hamlin, E. D. Hinckley, Milton B. Jensen, Marshall R. Jones, William C. Krathwohl, W. Mason Mathews, Joseph E. Moore, James D. Page, Thomas W. Richards, Mary L. Rothschild, Dorothy Rowe, Milton Schwebel, Vida E. Seyfarth, Dorothy M. Sherman, Donald E. Swanson, Ruth Thomson, Brian Tomlinson, Carroll A. Whitmer, and Walter L. Wilkins.

East Texas State College will hold a Counselors Conference on March 26 and 27. Carl R. Rogers will be principal consultant. The aim of the conference is to assist counselors, psychologists, and other educational workers to gain a better understanding of ways in which they may apply client-centered concepts to their counseling and group activities. The conference is sponsored by East Texas State in cooperation with the Texas Personnel and Guidance Association, Texas Education Agency, and the Hogg Foundation for Mental Hygiene.

The Survey Research Center of the University of Michigan will hold its Annual Summer Institute in Survey Research Techniques again this summer. The dates for the regular session are July 19 to August 13, with an introductory session from

June 21 to July 16. For detailed information write to the Survey Research Center, University of Michigan, Ann Arbor, Michigan.

The Third Western Training Laboratory in Group Development will be held at Idyllwild, California, between August 15 and 27, 1954. The Laboratory is intended to provide understanding and skills for individuals who want to improve their effectiveness in working with groups. For information, write to the Department of Conferences and Special Activities, University Extension, University of California, Los Angeles 24, Calif.

The department of psychology, Springfield State Hospital, Sykesville, Maryland, will hold a one-day workshop conducted by Zygmunt Piotrowski on "Diagnosis of Cerebral Disorders by the Use of the Rorschach" on March 19, 1954. There is no fee. For information write to Dr. Michael H. P. Finn, Department of Psychology, Springfield State Hospital, Sykesville, Maryland.

Postdoctoral fellowships in clinical psychology are available at Worcester State Hospital beginning July 1, 1954. Support for the fellowships has been requested from the USPHS. Appointments will carry a stipend of \$3,000, tax free. The program is planned to provide training in areas not ordinarily covered intensively in graduate study. The fellowship permits the student to participate in integrated research with workers in related disciplines. Clinical training and supervised psychotherapeutic experience is also provided. Application forms may be obtained from Dr. Leslie Phillips, Chief Psychologist, Worcester State Hospital, Worcester 4, Massachusetts.

The Postgraduate Center for Psychotherapy of New York has announced advanced training opportunities in psychotherapy. The program is designed to train psychiatrists, clinical psychologists, and psychiatric social workers to function within the framework of a medical setting. Clinical facilities are provided by the clinic of the Center which is licensed by the New York State Department of Mental Hygiene. Prerequisites for psychologists are: (a) A PhD in psychology from an accredited university, including courses in personality theory, psychopathology and the theory and practice of projective techniques. (b) Two years' experience under adequate supervision at recognized centers. This experience must have in-

cluded consultation, diagnostic testing, and use and evaluation of the standardized individual intelligence tests and recognized projective techniques. (c) Membership in the American Psychological Association. Psychologists are accepted only on a full-time basis with stipends of \$3,600 the first year and \$4,000 for the second and third years. Scholarships are given to accepted candidates to pay for all didactic courses, clinical seminars, and supervision. For further information and applications, write to Dr. Theodora M. Abel, Director of Psychology, Postgraduate Center for Psychotherapy, Inc., 218 East 70th Street, New York 21, N. Y.

The department of psychology of the University of Rochester announces the Charles L. Rumrill Fellowship for basic research in human motivation in relation to communication and advertising. This fellowship, which provides a stipend of \$1,500 plus support of research costs, is available to predoctoral students. For further details, write to the Chairman of the Department of Psychology, University of Rochester, Rochester, New York.

The Helen Putnam Fellowship for Advanced Research in Genetics or Mental Health is available at the Radcliffe Graduate School of Arts and Sciences. Stipend is \$3,000 a year. Application blanks may be obtained from the Secretary of the Graduate School, Radcliffe College, Cambridge 38, Massachusetts.

The Tennessee Board of Examiners in Psychology has issued its first call for applications for a certificate of fitness for the license to practice in the State of Tennessee as a Psychologist or Psychological Examiner. Only persons eligible under the "grandfather clause" of the licensing law and who are practicing or employed in the state should apply at this time. Further information may be obtained from the Vice-Chairman of the Board, Dr. Louise W. Cureton, 1814 Prospect Place, Knoxville 15, Tennessee.

1954 APA Directory of Members. In the March issue of this JOURNAL special instructions will be given for those members who wish to bring their Directory entries up to date, and for those who will be submitting the information for the first time. The present plan is to publish the 1954 Directory in June or July.

Note on the History of the International Congresses of Psychology.¹ The first International Congress was held in Paris in 1889 under the Presidency of Alfred Binet. It was called the International Congress of Physiological Psychology, although curiously enough there was very little physiology. The majority of the papers were on the subjects of hypnotism and heredity. Over 200 members were enrolled, among them such famous names as Charcot, Richet, Ferrari, Helmholtz, Bain, Galton, Exner, Delboeuf, Lange, James, Tigerstedt, Wundt, Preyer, Hering, and Jastrow.

The second International Congress was held in London in 1892 under the Presidency of H. Sidgwick. It was called the International Congress of Experimental Psychology, experimental being interpreted by the President in the broad sense as including data obtained by observation as well as data from controlled experimentation. The papers were much more physiological and experimental than at the first Congress. Among the American members attending were Donaldson, Fabian Franklin, Christine Ladd-Franklin, Warren, F. W. Davis, Pace, J. Mark Baldwin, and Witmer. Titchener attended from Leipzig. It was at this Congress that Mrs. Ladd-Franklin expounded her new Theory of Light Sensation.

The third International Congress was held in Munich, in 1896, with Carl Stumpf as President. The term "experimental" was by this time taken for granted. Among those enrolled from America were Buchner, Cushman, Judd, H. G. Peterson, Arthur Pierce, Ethel Puffer, Stratton, Strong, Franz, and Titchener. S. Miller was the delegate from the American Psychological Association. Among other countries Russia was very well represented.

The fourth Congress was held in Paris in 1900, with Th. Ribot presiding; the fifth in Rome, 1905, G. Sergi presiding; the sixth in Geneva, 1909, Th. Flournoy presiding; the seventh in Oxford, 1923, C. S. Myers presiding; the eighth in Groningen, 1926, G. Hymans presiding; the ninth in New Haven, 1929, J. McK. Cattell presiding; the tenth

in Copenhagen, 1933, E. Rubin presiding; the eleventh in Paris, 1937, H. Piéron presiding; the twelfth in Edinburgh, 1948, J. Drever presiding, and the thirteenth in Stockholm, 1951, D. Katz presiding.

The International Congress of Psychology was a continuing organization with a permanent International Committee consisting in the later years of over seventy members. The administrative affairs of this permanent association were for many years in the hands of Eduard Claparéde. After his death the duties were taken over by H. S. Langfeld.

At the Edinburgh meeting in 1948 it was thought that psychology should have an international organization with broader activities than merely arranging for international congresses every three years. It was therefore decided to establish an International Union of Scientific Psychology with statutes similar to those of the Unions of the other sciences. The statutes were officially adopted at Stockholm in 1951, and the International Union of Scientific Psychology became the successor of the International Congress.

Applications for membership in the Fourteenth International Congress must be submitted before March 31, 1954. Hotel space in Montreal is limited, and it may not be possible to accommodate those who apply after that date. Application forms were published in the November *American Psychologist*, and they may also be obtained from the Congress Secretariat, Université de Montréal, Case postale 6128, Montreal, Canada.

The Congress plans to include a number of non-commercial exhibits of research equipment or techniques that will be of general interest. Any psychologist who would like to have an exhibit of his research work is urged to apply for space. The Congress will be unable to assume the expense of such exhibits, and the exhibitors will be responsible for setting up their own exhibits. In some cases, there may be difficulties with customs, so psychologists interested in exhibiting their work should obtain information well in advance. For detailed information write to Dr. Edward C. Webster, Director, Applied Psychology Centre, McGill University, Montreal, Canada.

¹ This note was excerpted from an address on "International Relations in Psychology," delivered by H. S. Langfeld at the recent Inter-American Congress of Psychology in Santo Domingo and reproduced with his permission.

Convention Calendar

American Psychological Association: September 3-8, 1954; New York City

For information write to:
Dr. Fillmore H. Sanford
1333 Sixteenth Street N. W.
Washington 6, D. C.

Child Study Association of America: March 1-2, 1954; New York City

For information write to:
Miss Ruth Sussman
132 East 74th Street
New York 21, New York

American Orthopsychiatric Association: March 11-13, 1954; New York City

For information write to:
American Orthopsychiatric Association
1790 Broadway, Room 406
New York 19, New York

Optical Society of America: March 25-27, 1954; New York City

For information write to:
Professor Arthur C. Hardy, Secretary
Room 8-203
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

American Psychosomatic Society: March 27-28, 1954; New Orleans, Louisiana

For information write to:
Miss Joan K. Erpf, Executive Assistant
American Psychosomatic Society
551 Madison Avenue
New York 22, New York

Aero Medical Association: March 29-31, 1954; Washington, D. C.

For information write to:
Aero Medical Association
P. O. Box 26
Marion, Ohio

Society of Experimental Psychologists: April 1-2, 1954; Ithaca, New York

For information write to:
Dr. James J. Gibson
Department of Psychology
Cornell University
Ithaca, New York

Illinois Psychological Association: April 3, 1954; Champaign-Urbana, Illinois

For information write to:
Dr. Stan S. Marzolf
Illinois State Normal University
Normal, Illinois

Eastern Psychological Association: April 9-10, 1954; New York City

For information write to:
Dr. G. Gorham Lane
Department of Psychology
University of Delaware
Newark, Delaware

American Personnel and Guidance Association: April 11-15, 1954; Buffalo, New York

For information write to:
Dean Gordon Klopf
State Teachers College
1300 Elmwood Avenue
Buffalo, New York

Southern Society for Philosophy and Psychology: April 16-17, 1954; Atlanta, Georgia

For information write to:
Dr. O. L. Lacey
Department of Psychology
University of Alabama
University, Alabama

West Virginia Psychological Association: April 24, 1954; Clarksburg, West Virginia

For information write to:
Dr. O. S. McLean
Veterans Administration Hospital
Clarksburg, West Virginia

International Council for Exceptional Children: April 27-May 1, 1954; Netherlands

For information write to:
Harley Z. Wooden, Secretary
1201 Sixteenth Street N.W.
Washington 6, D. C.

Florida Psychological Association: April 29-May 1, 1954; St. Petersburg, Florida

For information write to:
Dr. Theron Alexander
Department of Psychology
Florida State University
Tallahassee, Florida

Midwestern Psychological Association: April 29-May 1, 1954; Columbus, Ohio

For information write to:
Dr. Lee J. Cronbach
Bureau of Research and Service
University of Illinois
1007½ South Wright Street
Champaign, Illinois

Rocky Mountain Branch of the APA: April 30-May 1, 1954; Laramie, Wyoming

For information write to:
Dr. Lawrence S. Rogers
1046 Madison Street
Denver 6, Colorado

Western Psychological Association: May 20-22, 1954; Long Beach, California

For information write to:
Dr. Leona Tyler
University of Oregon
Eugene, Oregon

American Society of Group Psychotherapy and Psychodrama: May 2-3, 1954; St. Louis, Missouri

For information write to:
Dr. Edgar F. Borgatta
Laboratory of Social Relations
Harvard University
Cambridge 38, Massachusetts

American Psychiatric Association: May 3-7, 1954; St. Louis, Missouri

For information write to:
Mr. Austin M. Davies
Room 310
1270 Avenue of the Americas
New York 20, New York

American Association on Mental Deficiency: May 18-22, 1954; Atlantic City, New Jersey

For information write to:
Mr. Edward L. Johnstone
Chairman, Arrangements Committee
Woods School
Langhorne, Pennsylvania

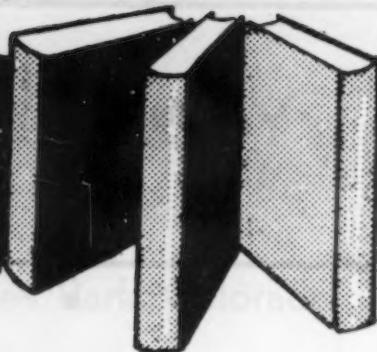
Canadian Psychological Association: June 5-6, 1954; Montreal, P. Q., Canada

For information write to:
Dr. G. A. Ferguson
Peterson Hall
3600 McTavish Street
Montreal, P. Q., Canada

International Congress of Psychology: June 7-12, 1954; Montreal, P. Q., Canada

For information write to:
Dr. Donald G. Marquis
Department of Psychology
University of Michigan
Ann Arbor, Michigan

Macmillan Texts



For a Science of Social Man: Convergences in Anthropology, Sociology & Psychology

by John Gillin, editor, H. Becker, A. I. Hallowell,
P. Murdock, T. M. Newcomb, T. Parsons, and M. B. Smith

In this unusual book seven leading scientists in anthropology, psychology, and sociology pool their efforts to examine the common meeting grounds of their disciplines. On the basis of a systematic, but concise, analysis of the present status and future prospects of the sciences dealing with human behavior in society, the authors show the way to further fruitful collaboration among students of social behavior.

Ready February 1954

Psychological Testing

by Anne Anastasi

Here is an introduction to the principles and techniques of psychological testing, including a survey of the major types of available tests and a critical evaluation of examples of each type—intelligence, aptitude, and personality measures. Part I concerned with principles of psychological testing provides the tools with which the student can evaluate specific tests. Part II covers general classification tests, formerly called "intelligence tests." Part III discusses the differential testing abilities, or profile approach, which characterizes the most recent developments in testing, and Part IV deals with the measurement of personality characteristics.

Ready May 1954

Educational Psychology

by G. M. Blair, R. S. Jones and R. H. Simpson

Using actual classroom examples to illustrate psychological theories, this text bridges the gap between psychological theory and the work of teaching by preparing the teacher-in-training to handle problems which will arise in the course of his teaching. The book covers such topics as the social psychology of the classroom, appraising the effectiveness of the school program, and the role of the teacher as a learner. The approach is one which develops a theoretical framework for dealing with educational problems followed by an application of the principles thus developed to classroom situations.

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